How To Check Cap Tubes . . . . . Pg. 33

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Exported Refrigeration Could Cut The Gordian Knot of Our Farm Problem

(Conscience of the Industry Editorial by George F. Taubeneck)

AMERICA'S most worrisome domestic problem is its ever-mounting, expensively wasteful, taxpayer-subsidized farm surpluses. Right now we don't know what to do with $7,000,000,000 of foodstuffs on which we are paying almost $114,000 *every hour* just for storage alone!

The world-at-large's chief problem on the other hand, is malnutrition. Nearly all of the troublesome areas on the globe are cantankerous because their inhabitants don't get enough to eat. Hungry people foment revolutions, turn toward Communism or Castroism or Lumumbaism . . . you name it, and it always spells "hunger."

Can our embarrassment of agricultural riches be employed to win the Cold War? And, at the same time, can

(Continued on Page 18, Col. 1)

Kaiser Aluminum Plans To Make Refrigerants

OAKLAND, Calif.—Plans for entering the halogenated refrigerant field were disclosed last week by Kaiser Aluminum & Chemical Corp.

Announcing further expansion of manufacturing and marketing operations in the chemical industry, D. A. Rhoades, president, said the corporation is undertaking the immediate construction of a $6 million plant for the production of fluorocarbons and hydrogen fluoride.

The new facilities will be built adjacent to the present alumina and caustic-chlorine plants at the corporation's Gramercy, La., Works. The new fluoride facilities there will be integrated with an aluminum fluoride plant which has been previously announced, and operations are scheduled for the latter part of 1962.

"Distribution and technical services are being established to market the hydrogen fluoride

(Continued on Back Page, Col. 3)

Controls Co. Names Becker, Topp VPs

CHICAGO — Controls Co. of America has named George D. Becker as group vice president, and A. L. Topp has been appointed general manager of the Heating & Air Conditioning Div. and elected a vice president of the corporation, it was announced by Louis Putze, president.

Becker was formerly general manager of the Heating & Air Conditioning Div. and corporate vice president of operations. As group vice president, he will be responsible for the Heating & Air Conditioning Div., in Milwaukee; the recently acquired Thermac Gas Div., Corona, Calif.; and the Andrick Tool Mfg. Co. in Schiller Park, Ill., a wholly-owned subsidiary. He

(Continued on Page 35, Col. 5)

James F. Dailey Dies

TAMPA, Fla.—James F. Dailey, 72, who retired last January as president of Typhoon Heat Pump Div., Hupp Corp., after having been associated with the firm for 44 years, died recently in a hospital here.

Dailey was a founder of the original Typhoon company, a director of Hupp, and a member of ASHRAE. Survivors include his widow, Mrs. Loretta E. Dailey, two sons, three grandchildren, and a stepson.

Single Heating, Cooling Load Calculating Procedure Ready

First Publication Will Appear In New NWAHACA Manual J Available Soon

A Federal Housing Administration request for a single load calculation procedure for both winter and summer air conditioning has led to the development by three main industry associations of a procedure that has received acceptance.

First publication of the new procedure will apparently be in the National Warm Air Heating & Air Conditiong Assn.'s Manual J "Load Calculation for Residential Winter and Summer Air Conditioning." This new manual in the NWAHACA series, to be available soon, will supersede and eliminate Manuals 3 and 11.

Participating in the development of the single load calculation procedure were the Air-Conditioning & Refrigeration Institute (ARI) and the Institute of Boiler & Radiator Manufacturers (IBR). Both of these groups had also made available individual methods for calculating the heat gain of a house for the design of a central cooling system.

What the FHA found objectionable was that the heat gain totals produced by each of these methods often had no similarity. The result was a disparity in comparative bidding which was a thorn in the side of FHA, mortgage lenders, and air conditioning dealer-contractors seeking to sell equipment to homes with FHA-insured mortgages.

The FHA request for action led to the formation in 1959 of a special "Industry Heat Gain Joint Study Group." Hundreds of man-hours of collective engineering efforts were put into the project by Herbert Gilkey of

(Continued on Back Page, Col. 1)

Name Goldsmith To Acme Post

JACKSON, Mich. — Appointment of William T. Goldsmith to the newly-created post of director of marketing for Acme Industries, Inc., Jackson, Mich., and Greenville, Ala., manufacturer of air conditioning and refrigeration equipment, is announced by P. A. Weatherwax, executive vice president and general manager.

Goldsmith

Goldsmith will be responsible for directing and coordinating Acme's expanding, nationwide marketing program and sales activities.

He has held key sales management and administrative assignments for the past several years with the York and Ingersoll Kalamazoo division of Borg-Warner Corp. Goldsmith was also formerly associated in a sales executive capacity with General Electric Co.'s Appliance Control Dept.

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Where Your Money Goes

It will happen tonight while you sleep.

During the first six hours of your repose the government will spend some $684,000 to store our farm surpluses. The same thing will happen during the six hours after you awaken. In fact, it happens *every* six hours, every day.

Just storing these surpluses costs $1 billion a year—a total of $16 billion since the program began. If all this money were split up equally it would provide more than $88 for every man, woman, and child in America!

Farm surpluses have been mounting steadily under both political parties. Why? Well . . .

Of 30 million Americans who worked in agriculture in 1935, for example, according to figures compiled by the Rural Electrification Administration:

73% had to carry water from wells or a like source of supply.

77% had outdoor toilets.

99% had neither a bathtub nor a shower!

Things are different now! Most farms are hugely successful corporations.

Today, farmers and non-farmers alike recognize that it is high time to revise these protect-the-one-mule-farmer laws, but no one is sure of how to go about it.

Why It Is Happening

Reasons for this surplus are not hard to find. In the 1920's, the average yield of cotton per acre was around 132 lint

(Continued on Page 12, Col. 1)

Lennox Bows Evaporator Units, Roof Top Series, Condensing Unit

NEW YORK CITY—Lennox Industries, Inc. publicly introduced here recently:

1. A new series of industrial-commercial evaporator-blower-filter units offering capacities of 8 through 35 tons.

2. Larger size roof units for heating only, heating and ventilating, or heating, cooling, and ventilating. New models range in heating output from 280,000 to 1,000,000 Btuh and cooling capacities from 10 to 45 tons.

3. An 11-ton air-cooled condensing unit that is claimed to have a Btuh capacity closely approaching water-cooled units of the same horsepower features. (This unit was described in the July 17 issue of the NEWS, page 19.)

The new fan-coil-filter units are designed for upflow, downflow, or horizontal air delivery and for indoor or outdoor applications.

The Lennox-designed dual circuit evaporator coil accomplishes effective humidity control through an inherent face and

(Continued on Page 34, Col. 3)

Brighter Lighting Boosts Cooling Load

ST. LOUIS—Since new office buildings are almost universally air conditioned and as desired lighting levels increase, lighting and heating have become increasingly synonymous with cooling load, the Illuminating Engineering Soc. heard recently.

"Lighting remains the largest single load upon the air conditioning system, even though

(Continued on Page 35, Col. 2)

New Molecular Sieves Offer 'Superior Stability' with R-22

SOUTH CHARLESTON, W. Va.—A new desiccant specifically designed for service in refrigeration systems was announced recently by Linde Co., division of Union Carbide Corp.

The disclosure was made by R. L. Mays, development supervisor of Linde's Molecular Sieve Products Dept., at a Union Carbide Chemicals Co. seminar attended by representatives of about 15 companies within the refrigeration industry.

The new desiccant, "Molecular Sieve 4A-XH Beads," is claimed by Union Carbide to represent "a considerable technical advancement over other types of desiccants previously available for refrigeration service.

"For many years," the company said, "original refrigerant grade 4A Molecular Sieves have been well known for their excellent performance. The new product retains the high capacity of the original beads for both water and acid, while combining several improved characteristics requested by the industry.

"These include: over ten times less R-22 decomposition than the original product, three times greater resistance to attrition, twice the crush strength, and 10% higher bulk density."

Commercial production has started, and the product is available at the same price as the original 4A Beads. Samples may be obtained from the Molecular Sieve Products Dept., Linde Co., Tonawanda, N. Y.

"Twofold increase in crush strength and threefold increase in attrition resistance (relative to original type 4A Beads) were achieved in the new product without sacrificing their outstanding capacity for water and acid," it was stated.

"On a volumetric basis, the water capacity of Type 4A-XH is 10% higher than that of Type 4A over the range of concentrations and temperatures of interest in refrigeration systems.

"Refrigerant - 22 decomposition studies were carried out on Type 4A-XH and, for comparison, on the original Type 4A Molecular Sieves.

"Since a useful means of comparing the chemical stability of various systems is afforded by the relative amounts of gas formed, these studies involved the measurement of the non-condensable gas (mostly carbon monoxide) formed as a product of R-22 decomposition. Chloride formation was also measured. The stability test data obtained is shown in the table above.

	ml (STP) gas/g Sieves				g chloride/g Sieves	
Contact Time weeks ..	1	2	4	6	4	6
4A-XH Beads	0.04	0.10	0.20	0.22	..	0.0010
Original 4A Beads	2.9	3.6	4.8	..	0.012	..

"The superiority of the Type 4A-XH with respect to chemical stability in R-22 is clearly indicated by this data.

"The crush strength of the new beads was determined on a Chatillon Tester which measures the resistance of the bead to an axial load that is uniformly increased to the point of destruction. Type 4A-XH Beads were found to have twice the strength of original beads.

"The attrition resistance was measured by repeatedly air-lifting the beads through a 9-ft long zig-zag path in a 2-in. diameter glass tube, and determining the loss after 2,000 cycles as 40 mesh or smaller material. The new beads were found to have three times the resistance or original beads to the attrition forces involved."

Folsom Co. Set to Introduce Unitary Air Conditioners

DALLAS—The Folsom Co., Inc., here is setting the stage for the 1962 season with the announcement of new company officers and plans for entering the manufacture of unitary type air conditioning equipment.

New officers are: Hans C. Glitsch, president; Ervin I. McCain, vice president, general manager; E. M. (Shorty) Howard, vice president, general sales manager.

The company named Jack McDonald, formerly chief engineer of Mathes and Republic Transcon, as chief engineer; and Jack Stiles, formerly regional sales manager for the newly-formed Central Air Conditioning Div.

"The new line of air conditioning units will be UL-approved and rated in accordance with the ARI rules," the announcement said.

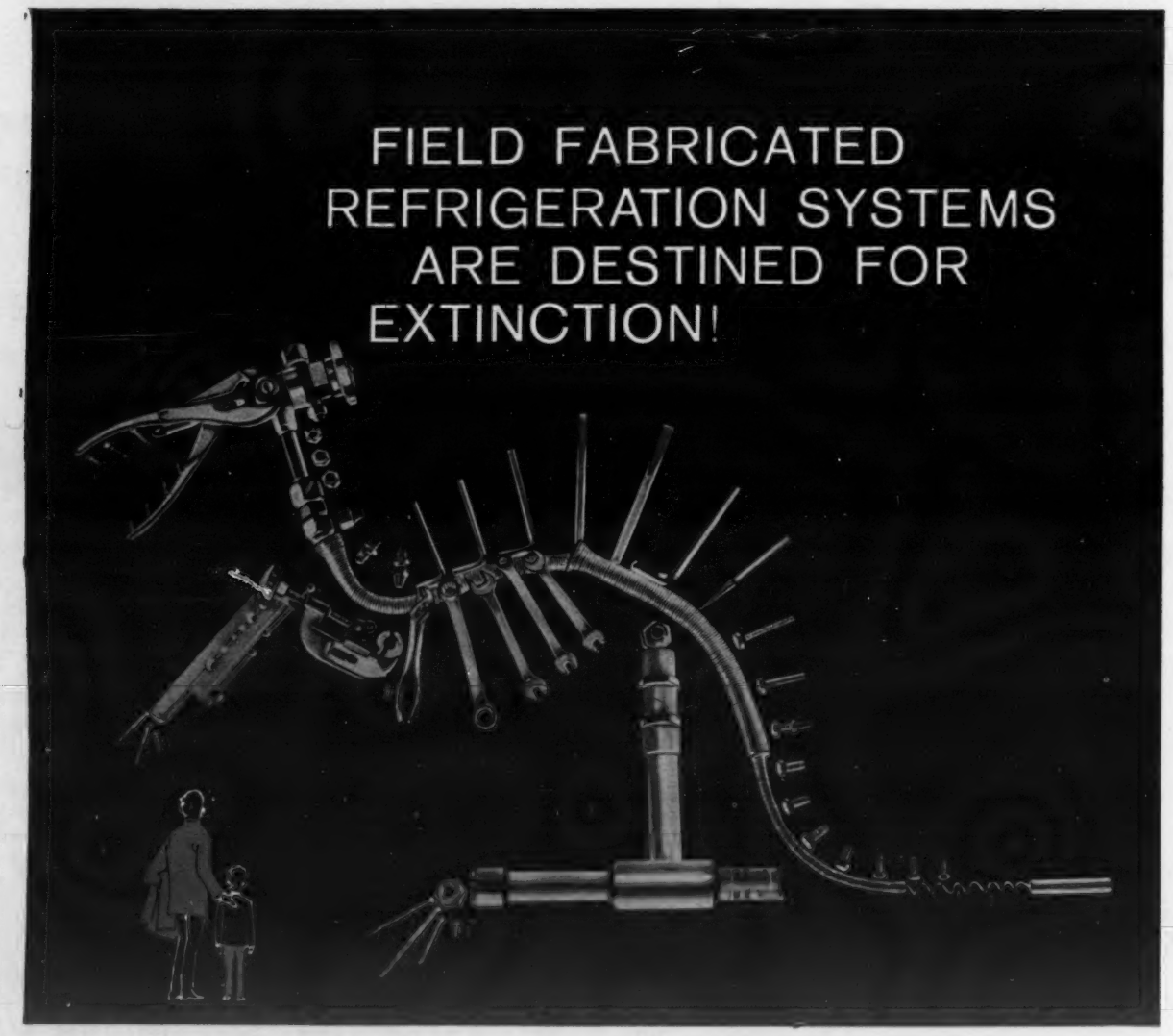
"The Folsom Co. presently manufacturers a complete line of space heaters and high static central furnaces for heating comfort and designed to use with central air conditioning. The company has incorporated such features as insulated blower compartments for quiet operation and newly-designed heat exchanger for free air movement.

"The new line of air conditioning units ranging from 2 through 10 tons for use in residential and commercial installations will be ready for delivery on or before Nov. 1, 1961. A complete line of coils tailored to fit the vertical, counterflow, and horizontal furnaces will also be available along with a full line of air handlers for free blow and duct installations.

"The Folsom products will be merchandised nationally through a strictly supervised franchise dealer organization. Plans for a school designed to aid interested companies in merchandising and servicing Folsom products is in the making."

Dr. Walker Resigns U. of Miami Posts

CORAL GABLES, Fla.—Dr. Walter O. Walker has retired as Dean of Research & Industry and Professor of Chemistry at the University of Miami. Dr. Walker is continuing his work in refrigeration research as director of the industrial chemical research laboratory. He also continues as consultant to General Chemical Div., Allied Chemical Corp.



NEW KRAMER THERMOBANK-COMPRESSOR *Systems make field-fabrication as obsolete as dinosaurs and open a new era of opportunity in refrigeration.*

Gone is expensive, time-consuming and inefficient field-fabrication of refrigeration systems and with it your major headaches—shortage of skilled manpower and uncertain costs! Kramer's THERMOBANK-COMPRESSOR SYSTEMS are complete systems (high side and low side), factory engineered, instrumented, assembled, tested and run-in. For outdoor installations, they arrive on the job in all-weather aluminum housings, and "Winterstated" for year-'round automatic operation.

Requiring only connection of refrigerant lines and electrical service, they permit you to handle a much greater volume of business with your present skilled staff. Gone are costly delays for components; you get a complete Kramer System with a single order eliminating reams of paperwork. Kramer's System rating assures accurate predictable performance. Costs are predictable, too, since errors in assembly or labor and material estimates are obviated.

Your customers get a better buy and a better system incorporating Kramer pioneered features including the unique THERMOBANK re-evaporative defrost with all-season Winterstat control for any size job and any temperature level.

To learn how Kramer THERMOBANK-COMPRESSOR SYSTEMS can brighten your profit picture, request Bulletin C 484A.

KRAMER THERMOBANK-COMPRESSOR SYSTEMS

KRAMER TRENTON CO. Trenton 5, N. J.

48 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

GAMA Projection Shows Year-End Sales Wiping Out Effects of Recession

DALLAS—William G. Hamilton, Jr., president of the Gas Appliance Manufacturers Assn., told delegates to the American Gas Assn. convention here that a projection through the final quarter of improvements shown in gas appliance and equipment sales during August and September will wipe out the effects of the recession earlier in the year.

"In fact," he added, "it now looks as though several of our product divisions will ring up new records in 1961 and lead the industry as a whole to an all-time high in 1962."

Among the products experiencing record demand, he said, are gas boilers for central heating, gas air conditioning, and built-in gas ranges. Several leading manufacturers recently have reported summer sales up from 23 to 34% over last year's, the GAMA head said.

He added that a major producer of gas central air conditioning is "working round the clock" to produce more than 4,000 units a month and is currently expanding production facilities.

Harold Massey, managing director of GAMA, said much of the industry's recent progress has been traceable to realistic research and product development aimed at functional and maintenance improvements.

Expenditures for research this year, including physical facilities and staffing for this purpose, will amount to more than $100,000,000, Massey said. Currently, GAMA members are spending at least three times as much as they did in 1958 to improve their products and to develop new concepts of gas utilization, he said.

Late Summer Sales Of Conditioners Up In Many Areas

DETROIT — Another area — Philadelphia — has reported a jump in August air conditioner sales over August, 1960.

According to the Electrical Assn. of Philadelphia, distributor sales of room air conditioners in Bucks, Chester, Delaware, and Philadelphia counties zoomed to 1,823 from -251 a year earlier. The latter figure reflected return of units sold on consignment during previous months.

As reported earlier in the NEWS, August distributor shipments of air conditioners in the St. Louis area were 174% ahead of the same month of 1960, and shipments of room air conditioners in the Cleveland area were up 30%.

For the first eight months of this year, Philadelphia-area distributors sold 46,420 room units, compared to 45,737 in the like 1960 period. Of the former total, 41,808 units were sold to dealers and 4,612 to builders.

The Electric League of Southern California reported that for the first seven months of this year, distributor sales of air conditioners and heat pumps in a seven-county area gained 10.7% compared to the same period a year earlier.

July sales of 10,495 units brought volume for the January-July period to 48,370 units, against 43,690 in the corresponding period of 1960. The report covers sales in Los Angeles, Ventura, Orange, Riverside, Kern, Santa Barbara, and San Bernardino counties.

West Penn Power Co., Greensburg, Pa., continued to report lower sales of room coolers by dealers this year compared to 1960. Dealers in its area sold 279 units in August, compared to 340 a year earlier, and 1,432 in the January-August period, against 2,014.

Holly-General Names Whaling

PASADENA, Calif.—Jack Whaling has been appointed vice president in charge of sales for the Holly-General Div. of the Siegler Corp., it was announced by Robert K. Miller, Holly-General president.

Jack Whaling

Whaling started at Holly-General Div. in 1960 and was southern California divisional sales manager. In his new position, he will be responsible for sales of Holly-General products in the United States, Canada, and Mexico.

The Holly-General Div. manufactures heating and air conditioning equipment.

Welbilt Introduces Roof-Mounted Combination Heating, Cooling Unit

MASPETH, N.Y.—A new roof-mounted combination air conditioning and heating unit, employing several new engineering techniques and designed for one-story structures, has been developed by Welbilt Air Conditioning & Heating Corp., a wholly-owned subsidiary of Welbilt Corp.

The units range in size from 5 to 35 tons for air conditioning and 150,000 to 600,000 Btu for heating. They are oil or gas-fired and weigh from 1,200 to 5,000 lbs.

Designed to sell from $1,500 for the smaller size to $8,000 for the larger units, the system is free of rust since it has aluminized steel housing, and is easily serviceable, Michael Parcaro, president of the Welbilt Air Conditioning & Heating Corp., pointed out.

Other features, Parcaro noted, include mechanical draft, electric ignition, jet-type flame for the heating, balanced dampers, and a potentiometer damper motor.

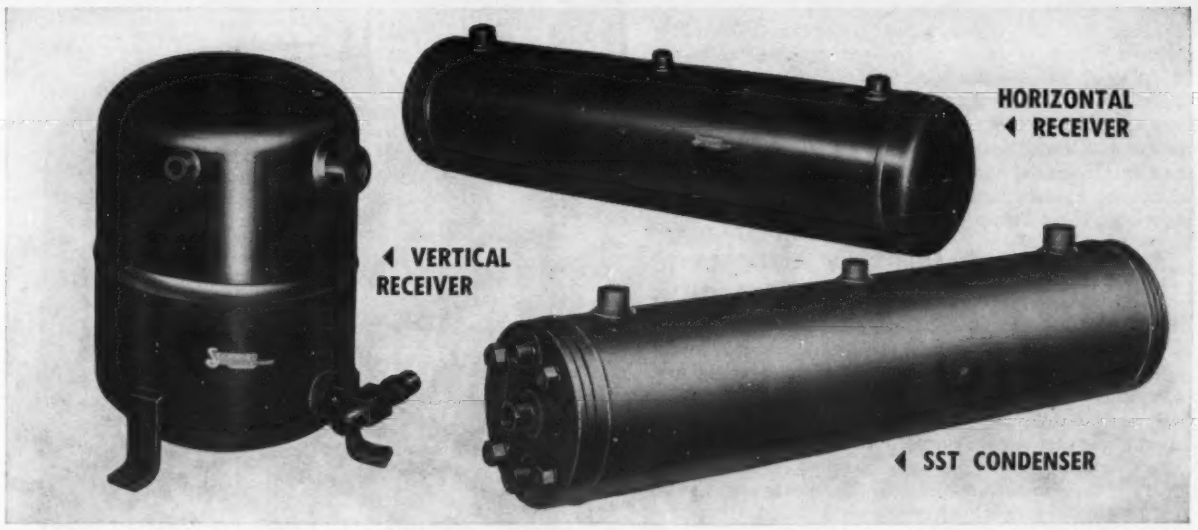
The unit has completely automatic controls for day-night, winter-summer, and for ventilation and outside air and can be installed with minimum labor due to its strong, simple construction, he said.

Production of the air conditioning-heating system has started in the firm's Farmingdale, N. J., plant. Hirsch noted that orders totaling $400,000 already have been received.

STANDARD water-cooled CONDENSERS

1/4 H.P. to 30 H.P.

U.L. or A.S.M.E. tagged



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STANDARD CONDENSERS and RECEIVERS are widely known for fine performance and dependability. *Rated capacities under all operating conditions.* Simplified and readable capacity charts available. Used as original equipment by leading manufacturers. Sold thru air conditioning and refrigeration wholesalers everywhere.

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Manufacturers of LIQUID RECEIVERS, SHELL and TUBE, SHELL and COIL, and COUNTERFLOW CONDENSERS

National Distributor for Primore Rotalock Valves

Baltimore Aircoil Names Strohecker

BALTIMORE — The appointment of George M. Strohecker as advertising manager for Baltimore Aircoil Co., Inc., has been announced by William E. Kahlert, vice president in charge of sales.

Strohecker

Prior to joining B.A.C., Strohecker was an account executive for Pridemark Press in Baltimore, specializing in creative promotional planning and sales contact with industrial and institutional clients.

"The recent appointment is expected to increase customer awareness of knowledge of B.A.C. products.

Hanson Heads So. Cal. RACCA

LOS ANGELES—Al Hanson, president of National Refrigeration Sales, Inc. of Los Angeles, has been elected president of the Refrigeration & Air Conditioning Contractors Association of Southern California.

He takes over the post from L. P. Jacobsen who was recently transferred by his company, the York Div. of Borg-Warner Corp., from the Los Angeles area to Ohio.

Hanson, who was selected at an association board meeting, formerly was vice president of the organization.

Active in refrigeration and air conditioning circles on both the local and national level, Hanson is currently chairman of the Certified Refrigeration & Air Conditioning Foundation (CRAC).

Emerson Electric, Ranco Join In Plan To Manufacture, Sell Motors In Europe

COLUMBUS, Ohio — A. M. Hoover, president of Ranco Inc. here, and W. R. Persons, president of The Emerson Electric Mfg. Co., St. Louis, announced that Ranco and Emerson have joined in a new venture in Europe, to manufacture and distribute fractional horsepower motors for the growing market there.

Plants will be located in Scotland and Italy.

Emerson will hold a one-third interest based on investment and provision of designs and technical know-how relating to the manufacture of motors. Ranco will supply manufacturing facilities, management and sales services abroad, it was pointed out.

Ranco, a leading manufacturer of automatic control devices, has world-wide manufacturing and marketing facilities. Its controls activities will not be affected by the new European venture.

Emerson Electric is a major producer of small motors in the United States for a wide variety of appliances, refrigeration, and other commercial and industrial uses. It is a builder of lighting fixtures for both commercial and industrial use, and also produces shop tools, fans, and a range of electric heat devices. The company has an Industrial Electronics Div., and produces a broad range of electronics and missiles for defense in its Electronics & Avionics Div.

Trane Names 3 To Management Positions

LA CROSSE, Wis.—New management appointments in The Trane Co. packaged equipment sales department were announced recently by A. C. Menke, vice president, air conditioning and heating sales.

W. Ferguson

James Kuppe

Carl Lindblom

Menke said the new responsibilities resulted from the company's continual expansion in the residential and small commercial air conditioning and heating markets.

James Kuppe was appointed manager, furnace sales department. In addition to sales responsibilities for the company's residential furnace lines, he will have additional responsibilities in the company's program of expanding and strengthening its nationwide dealer organization for all packaged products. Kuppe joined Trane in 1960.

William Ferguson was named manager, self-contained cooling sales department. Ferguson joined Trane in 1955.

Carl Lindblom was named manager, split-system cooling sales department. Lindblom joined Trane in 1958 as a member of the Student Training Program.

Southern Cal. ASHRAE Will Hear About Dust Control Philosophy

LOS ANGELES—"The Philosophy of Dust Control at Autonetics" is the subject for the Oct. 9 meeting of the Southern California Chapter, American Society of Heating, Refrigerating & Air-Conditioning Engineers.

W. R. Jerome, industrial engineer for Autonetics, division of North American Aviation, will be the speaker. He designed and supervised construction, operation, and maintenance of North American's first "dust free room" in 1953; has been active in this work since.

Death Notices

Gilray M. Anderson

RICHMOND, Va.—Gilray M. Anderson, vice president of H. C. Gundlach & Co., Inc., local supplies wholesaler, died recently.

Rudy Peterson

OGDEN, Utah—Rudy Peterson, 58, owner and operator of Peterson Heating Co. since 1942, died recently at Dee hospital here. He had operated a heating business in Portland, Ore., from 1930 to 1942.

NEW! *internal mounted CL compressors*

INCREASE ELECTRICAL OPERATING RANGE

Tecumseh Model CL compressors offer the widest operating electrical range in the industry. They have been designed to meet the variances in 3 phase voltage throughout the country, and to operate efficiently within ±10% of their designated nominal voltages.

All single phase models are dual voltage with nominal values of 230/208 V; 3 phase compressors are dual voltage 240/208 V. Models are also available in 3 phase 440 V and 550 V.

Any CL model can be specified as PSC for air conditioning applications and is convertible to CSR for excellent Heat Pump operation.

OFFER COMPLETELY AUTOMATIC INHERENT PROTECTION

A small, sensitive bayonet type internal thermostat is positioned directly within the motor winding to insure a highly accurate response to motor temperature. Cut-a-way of thermostat, at right, shows the great number of turns in the motor winding not only in direct contact but also in close proximity to the thermostat.

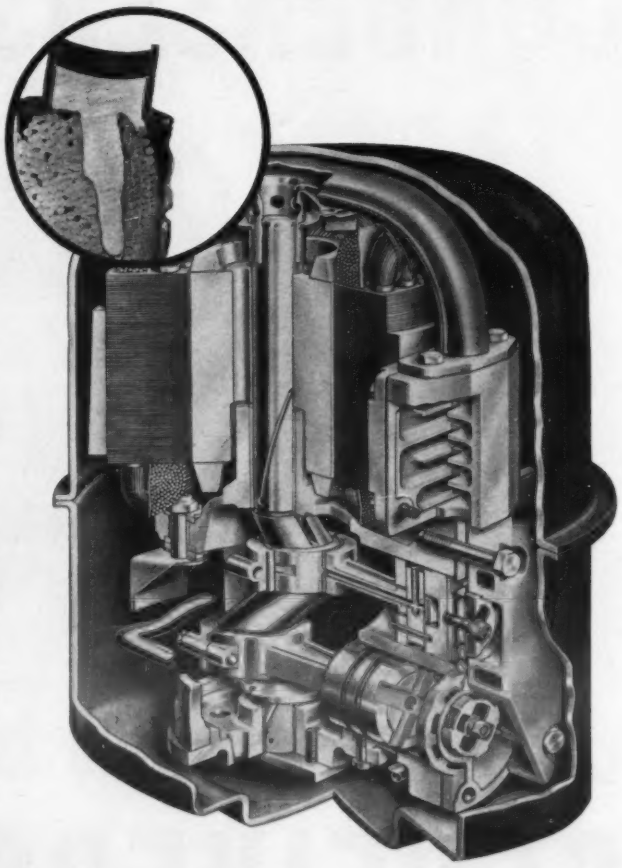
The thermostat, responding to motor heat, and supplementary overload, responding to current, provide fully automatic inherent protection for the compressor. These components, in the pilot circuit, control the contactor which makes and breaks line current, and the system does not require a low pressure control.

PROVEN 2-POLE COMPRESSOR DESIGN

Because the 2-pole motor allows obvious savings in size and weight, Tecumseh has pioneered this design. Today over 4½ million Tecumseh 2-pole compressors in sizes from 1/12—4 HP are enjoying trouble-free field operation. The benefits of reduced size and weight plus important cost savings are now available to our customers.

Mylar Lecton motors are also used on all CL models. These motors will not absorb moisture and therefore provide an extra safety factor in system processing.

New fiber-glass terminal covers permit the use of rubber covered power cord in place of BX cable for most installations.



Internal mounting on the "Silent Series" CL compressors reduces noise and vibration to a minimum.

CL compressors are available from 2½ through 4 HP with capacity from 30,500 to 50,500 BTU.

Write or call Tecumseh for compressor specifications that match your requirements.

forty three million compressors in the field

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Walton Names 5 Distributors In Expansion Move

IRVINGTON, N. J.—In a major expansion move, Herbert E. Puttbach, sales manager of Walton Laboratories, Inc., has announced the appointment of five new stocking distributors for the firm's full line of residential, commercial, and industrial humidification equipment.

New distributors in the eastern region (all of the U.S. east of the Allegheny Mountains) are: Belco Distributors, Summerville, Mass.; Bell Pump Service Co., Hartford, Conn.; Carleton Stuart, New York City.

Added to the western region are: A. T. Distributors, Memphis; Klein-Dickert, Madison, Wis.

Puttbach said the distributors "will operate for Walton on a franchise basis, stocking all 27 Walton humidified models in depth and will provide both complete sales promotion and engineering assistance to their dealers."

In September

Shreveport Issues 113 Permits for Air Conditioning

SHREVEPORT, La.—During September, the city's Air Conditioning Dept. issued 113 permits with a total equipment and installation cost of $548,886, according to Hugh Austin, air conditioning inspector.

This compares with 101 permits issued during August for installations with a total cost of $416,508. September permits were broken down as follows:

Commercial: year-round air conditioning and heating—20; air conditioning—2; heating—1; replacements—1.

Residential: year-round air conditioning and heating—15; air conditioning—3; heating—56; replacements—3.

Alterations and/or additions —7. Refrigeration—5.

Largest commercial permit of the month was issued to Fitzgerald Plumbing Co. for a $293,737 air conditioning and heating installation for Newspaper Production Co. Largest residential permit—for a $5,925 air conditioning and heating replacement job—went to McDaniel Air Conditioning.

Austin added that 444 inspections and surveys were conducted in September.

Prison's Not So Bad —When Air Conditioned

NEW ORLEANS — "I don't know that I want to return to that hot, muggy, law-abiding society."

So declared one of two inmates released recently from the air conditioned women's wing of the parish (county) prison.

The other woman told Warden Louis Heyd: "I guess you better keep me here a little longer. I need some more of that rehabilitation."

Police Station Cool Cell Blocks, Nyet

BALTIMORE — Baltimore County officials have given the Dundalk Junior Chamber of Commerce permission to install central air conditioning in the Dundalk Police Station.

A used 7½-ton unit will be installed in the old fire hose tower behind the station and ductwork run from the tower into the building to cool the first and second floors. The Jaycees reportedly are paying about $1,000 for the installation.

Note to lawbreakers: the cell blocks will not be air conditioned.

Heating, Cooling To Be 'Buildorama' Topic

BIRMINGHAM, Mich.—A panel discussion on today's heating and air conditioning equipment will be held Tuesday, Oct. 10, as part of the "Buildorama" exposition on home modernization sponsored by the newly-organized Home Improvement Council of Greater Detroit.

The "Buildorama' is being staged at Showcase, Inc., a permanent public display facility for home products located on Maple Rd. near Hunter Blvd. here. It will run through Oct. 15.

The round table discussion, set for 2 p.m. at Showcase, will be moderated by Richard Goodwin, president of Goodwin Services here and a director of the Home Improvement Council.

Participating in the discussion will be George Asher, executive secretary of the Better Heating and Cooling Bureau, Gil Ham, executive director of the Hydronic Heating-Cooling Council of Detroit, and M. R. Martin, assistant chief engineer of the Air Conditioning and Refrigeration Institute.

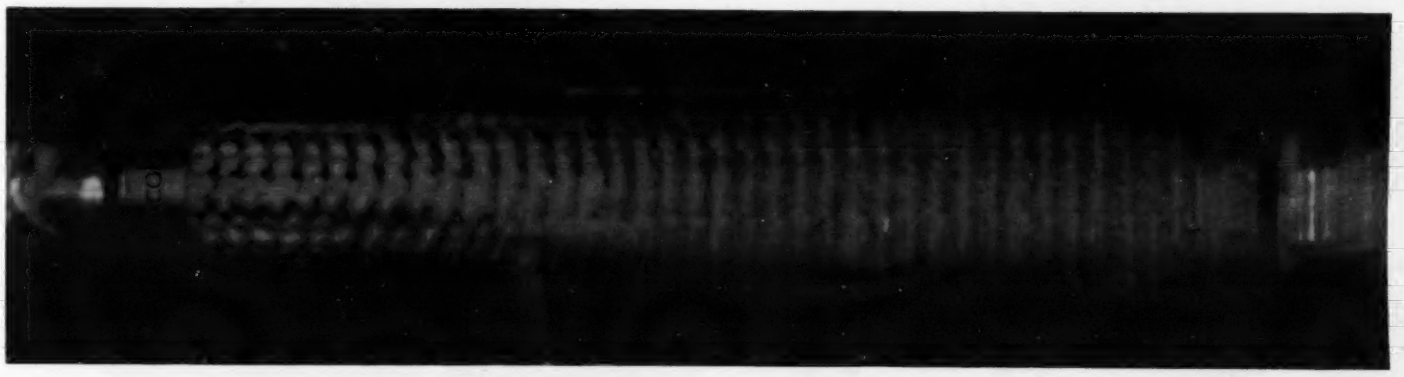
Martin will discuss the various aspects of residential cooling, the importance of getting a good contractor.

Eye catcher at the Buildorama is an air conditioned tepee, demonstrating that "even a tepee can be modernized."

Mueller Climatrol Appointees

RICHARD B. SCHMIDT, left, was recently named to the newly-created post of manager of marketing at Mueller Climatrol Div. of Worthington Corp. At the same time the firm announced the appointment of GEORGE M. HASE, right, as sales manager. Details were published on page one of the Oct. 2 NEWS.

DOUBLE LIFETIME,



CUT DOWNTIME

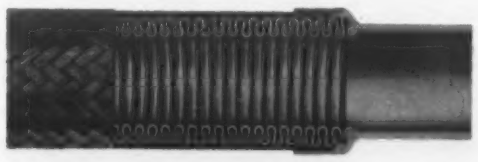
Dampening Tubing Vibration
With Anaconda Vibration Eliminators

Anaconda VE's are built for endurance. Vibratory fatigue testing in Anaconda Laboratories proves VE's offer twice the service life of the nearest competitive brand . . . and up to eight times longer service than other brands! HERE'S WHY: Anaconda VE's have a seamless, flexible core of tin bronze covered by special high-tensile bronze wire braiding. Sizes 2" I.D. and larger are double braided. Every unit is pressure tested and thoroughly cleaned. Each unit is inspected throughout production . . . from a chemical analysis of components before assembly, to a detailed, final inspection before sealing in a protective polyethylene bag.

You can count on Anaconda VE's to deliver longer life while dampening vibration in air conditioning, refrigeration, compressor units and general piping.

Recognized by Underwriters' Laboratories, Inc. under File SA 2585; sold by leading air conditioning and refrigeration wholesale distributors everywhere. For engineering information, write: Anaconda Metal Hose Division, Anaconda American Brass Company, P.O. Box 791, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

61-950



Anaconda VE, the only connector with a flexible core of seamless tin bronze and special high-tensile bronze wire braiding for longest service dampening vibration in piping.

ANACONDA®
METAL HOSE DIVISION

Florida Distributor Uses Cost Comparison To Sell Heat Pump over Room Air Conditioner

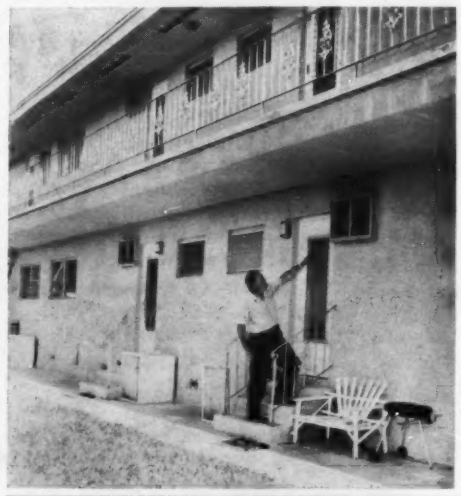
MIAMI, Fla. — More builders here are adopting heat pump central heating and cooling systems for residential construction as public acceptance of the heat pump concept becomes stronger, reports Bryan Hungate, central systems manager for Major Appliances, Inc., Miami distributor of Amana heat pumps.

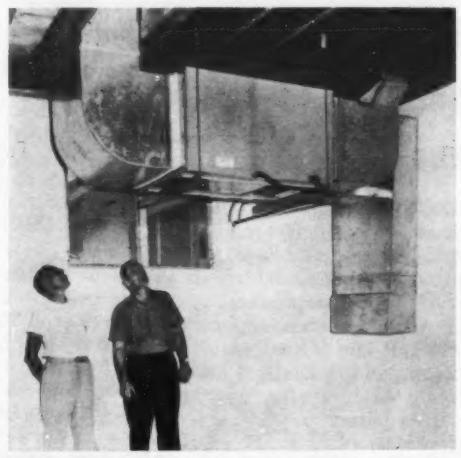
Hungate claims that the economy of a central air conditioning system, as compared to typical window unit installations, is more and more being recognized by the public.

As an example of a new single-family residence using a central system heat pump, Hungate describes a three-bedroom, two-bath ranch house recently completed by J. S. Carroll, a general contractor and builder in Miami. Located on a quiet street in outlying Miami Shores, the house has a large two-car garage attached to the rear.

Geiger Distributors, Inc., air conditioning and heating contractor, installed a 3-ton Amana heat pump high in one corner of the garage, off the floor and out of the way of the cars. Its cooling output of 38,000 Btu and heating capacity of 38,600 Btu "easily handles all heating and cooling needs of the 1,935-sq ft residence," it was pointed out.

As to costs, Hungate sets up "the following typical comparison between a central heat pump system and window units supplying the same Btu capacity:





HUNG FROM garage ceiling is 3-ton Amana heat pump that heats and cools 1,935-sq ft home in Miami Shores. J. S. Carroll, Miami builder (l.), and Bryan Hungate, central systems manager for Major Appliances, Inc., Miami, inspect the unit.

LEFT: Two-ton Amana heat pump installed through the wall centrally heats and cools units in North Miami, Fla. apartment house.

"Four 9,000 Btu window units, each draw 10 amps of power, or 40 amps. A single 3-ton central unit, however, supplying 38,000 Btu (more than the four window units combined) draws only about 16 amps. Savings in power consumption alone, then, run about 55%."

Hungate further estimates the cost of these four window units at approximately $900, to which he adds $300 to cover installation, service, and running of conduit. This, he says, compares with complete cost, purchase price plus installation and service, for a 3-ton heat pump of from $1,200 to $1,400.

"The $200 or so extra for a central system is obviously a good investment in month after month savings of operating expense," Hungate points out, "in addition to the simply cleaner, more attractive job of a central system."

"And public demand for central systems is not restricted here to new residential," he explains. "Many homeowners, whose room units are six or more years old, are replacing them with a completely new central system heat pump unit which not only cools better but heats their homes as well."

This acceptance also holds true for apartment dwellers, Hungate adds, citing the Como Apartments in North Miami where owner John Comanita installed 2-ton Amana heat pumps in each of 12 apartments—four 1,200-sq ft 2-bedroom units, and eight slightly smaller 1-bedroom units.

Hungate reports that Comanita has found the 2-ton models completely adequate to heat and cool the apartments. They also help to filter the air and reduce outside noise. Comanita intends to include Amana heat pumps in a new 24-unit apartment house he is planning for a nearby site.

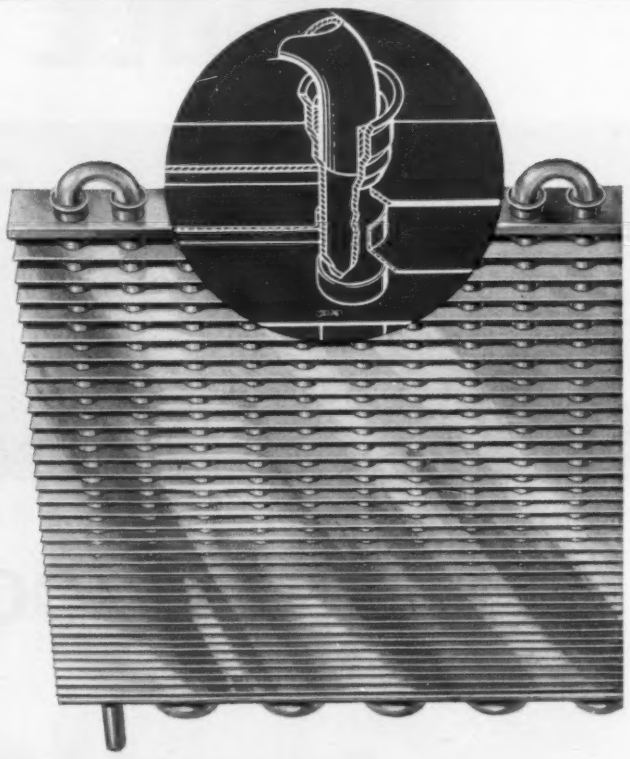
Ft. Lauderdale Gets New Cooling Firm

FT. LAUDERDALE, Fla.—A new air conditioning firm here is Simac Corp. located at 3250 N. Andrews Ave.

The firm will provide a complete service for Trane equipment and also will handle refrigeration and ventilation equipment for commercial and residential users. Manager is J. N. McCray.

Now more practical and efficient than ever!

Aluminum Tubing For Air Conditioners



Epoxy-Bonded Tube Joints Clear Way for Low-Cost Aluminum Tubing in Evaporators, Condensers

Aluminum tubing has always made a lot of design sense for fin-tube air conditioning evaporators and condensers: It's economical. It won't rust. It provides excellent heat transfer. With aluminum fins, it eliminates bimetallic corrosion.

And now, thanks to a practical tube bond method developed by Reynolds, and using epoxy resin, aluminum tubing can provide important advantages in production and performance, as well. The epoxy bond provides a strong, durable return bend—with no danger of flux corrosion.

Exhaustive tests, in the laboratory and in actual field installations, have proved the toughness of Reynolds new bonding technique—and the efficiency of Reynolds Aluminum tubing. The epoxy makes production much simpler, too. No welding, brazing, or soldering is necessary in fabricating the returns in fin-tube assemblies.

With this new bonding development, Reynolds Aluminum fin-tubing is a valuable addition to the air conditioner manufacturer's roster of cost-cutting, product-improving aluminum products: Reynolds pre-painted sheet—Colorweld T.M.—offers an efficient and attractive answer to cabinet design. Available in a full range of colors, this tough aluminum sheet has a baked-on enamel finish that takes any ordinary forming operation, and provides a handsome, durable cabinet.

Other Reynolds Aluminum products have been developed to cut weight and cost as motor mounts, fan blades, grilles, trim—even name plates.

Reynolds does not fabricate finned-tube evaporators, but does supply raw material for customer fabrication. For details, call your local Reynolds office, or write *Reynolds Metals Company, P.O. Box 2346-AS, Richmond 18, Va.*

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Watch Reynolds exciting TV programs on NBC: The Dick Powell Reynolds Aluminum Show every other Tuesday; Say When, weekdays; All Star Golf—in living color—every Saturday.

Small Cells Used for Hazardous Tasks

New Solid Propellant Processing Plant Requires 47 Heat Pumps, 3 Cooling Units

MESA, Ariz. — To air condition its uniquely-designed solid propellant processing plant, Rocket Power, a division of the Gabriel Co. of Cleveland, has installed 47 individual heat pumps and three separate cooling units.

In aggregate, these 2, 3, and 5-ton Mathes units, provide 124 tons of controlled air conditioning in two long, low structures set parallel to each other and separated by 150 ft of open area.

Had the 63,000-sq ft plant been constructed in conventional fashion for an explosive manufacturing plant with hazardous operations isolated in widely separated buildings, it would have been spread over 500 acres of land, William J. Higgins, executive staff engineer, pointed out.

But in the Rocket Power plant, designed by C. E. Bartley, president of the division, and Frank A. Marion, executive vice president, economical construction was obtained by modular design of operating cells while employe safety was assured by heavier concrete and steel construction.

15 by 20 Ft Cells Have Steel, Concrete Walls

Hazardous tasks are confined to 15 by 20 ft operating cells, which are separated from their remote control rooms by concrete and steel walls stressed to withstand 5,000 lbs of explosives.

Opposite the remote control rooms, which act as a central corridor, are service rooms for such operations as receiving, inspection, stores, chemical laboratory, lunchroom, X-ray, inert assembly operations, and shipping.

The building which houses the most hazardous operations is further protected by 5 ft of earth fill above the roof and a 30 ft embankment on the side between the buildings.

Separate Packaged Units Required

Separate packaged heat pumps for air conditioning were selected because humidity, temperature, and air movement has to be controlled within each operating cell, control room, and support room independently of each other, Higgins said.

Centralized cooling or heating duct system could not be used because of possible incidents whereby toxic exhaust gases could readily contaminate the entire plant, he explained.

All operating cells in the plant had to have explosion-proof air conditioning equipment, explosion-proof thermostats, and off-on switches.

Supply air fans for these cells had to be located outside the air stream. The air stream had to be free of all switches and other electrical devices which could cause sparking or arcing. When the system is operating in any room, the supply air fan must operate.

Non-explosion-proof equipment was installed in non-hazardous rooms. Automatic changeover thermostats are located in each room together with thermostats, on-off switches, and automatic-manual fan selector switch. To prevent tampering with the thermostat control setting, the stat is located near the equipment on the roof. Once it is set, room temperature is automatically controlled.

Ventilation Needs

A minimum ventilation of 10 cfm per person or 50 cfm per system is required in every cell or room. Supply and return air in the operating cells is not interconnected with that of another cell.

The heat pumps and air conditioners are located directly over the cells or rooms served. Galvanized steel ducts pass through pre-planned holes in the roof. Supply air grilles are of the double deflection type while return air grilles are the stamped face type. Fiber glass air filters are located in the return air stream on the roof.

Automatic Defrost

Heat pumps are provided with automatic defrosting controls, automatic defrosting reverse valve, automatic changeover thermostat, and supply air fan control to prevent discharge of air at below room temperature during heating or defrosting operations.

Each system is sized so that no supplementary electric resistance heating is required. This, Higgins claims, reduces operating costs considerably.

Higgins pointed out that when outside temperature is near or below freezing, which occurs occasionally here, and there is considerable moisture in the air, the outside coil of the heat pump may become covered with frost.

If this blanket of frost begins to reduce operating efficiency too much, the unit will automatically go into defrost cycle. The fan in the outdoor unit does not operate and, usually, the blower fan on the indoor unit will shut off automatically a few seconds after the cycle begins to prevent circulation of cool air.

The installation consists of 38 2-ton heat pumps, three 3-ton heat pumps, six 5-ton heat pumps, two 2-ton air conditioners, and one 5-ton air conditioner.

The installation was made by Searles Refrigeration Co. of Phoenix over a 45-day period. Installation costs amounted to $42,216, including maintenance for one year, Higgins reported.

Results obtained from this air conditioning system have made the Rocket Power solid propellant processing plant an ideally climatized facility, both for the employe and for the chemical processing operations, Higgins declared.

A study of the indoor plant temperatures over a one-year period revealed that there is a variance of only two or three degrees above or below the specified 77°F average temperature. Humidity, which is a major problem in propellant processing, has presented no problem here, he concluded.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

CAN A SINGLE MOISTURE INDICATING ELEMENT ACCURATELY SIGNAL DANGER IN BOTH REFRIGERANT 12 AND REFRIGERANT 22?

Of course it can't! And yet 4 out of the 5 manufacturers of moisture indicators have asked the refrigeration industry to accept the fact that one element can do the job... against all the rules of common sense and all the evidence of science. R-12 and R-22 have radically different characteristics and there's a big difference in how much moisture each refrigerant can stand before serious trouble develops in the system. Ansul's 200 "Dry-Eye" moisture indicators are the only ones that employ two separate indicating elements—one for R-12, one for R-22. The L-200 can be installed alone or with the new Ansul "System Boss" drier .... the T-200 is designed for use with the unique Ansul "T-Flo" drier to create another complete moisture control system. Want scientific proof of what really happens when a single R-12 element is called upon to signal trouble in an R-22 system? Write and we'll send a research bulletin... or ask your refrigeration wholesaler. ANSUL CHEMICAL COMPANY, MARINETTE, WIS.

College Gymnasium Makes Economical Use of Electric Infrared Heating

GREENVILLE, Ill. — That electric infrared heating is a practical and economical method of heating high-bay institutional, commercial, and industrial buildings is being demonstrated in the gymnasium of Greenville college here.

During the past winter an electric infrared installation has supplied both heat and light for all functions held in the new building.

The installation was jointly promoted by Luminator Inc., Chicago, manufacturer of the infrared fixtures; Guarantee Electrical Co., St. Louis, who handled the engineering and installation; and the Illinois Power Co., Greenville's local utility.

The Luminator infrared fixtures are equipped with General Electric T3 tubular quartz infrared lamps. These lamps convert about 87% of their input wattage into radiant heat. Burning at 4,100°F, they also give 6-8 lumens of light per watt when burned at full voltage.

The infrared rays generated by the lamps and reflected by the Luminator fixtures act like the rays of the sun. They do not heat the air. Rather, the energy from the lamps heats only persons or objects which the lamps' rays fall upon.

In all, 50 infrared fixtures are used in the Greenville college installation. Twenty of these are single lamp fixtures, the balance are equipped with two infrared lamps each.

The fixtures are positioned in rows along the ceiling and each row contains a type of fixture with reflectors specifically designed to direct or spread infrared heat over a particular area or zone of the floor below.

This design feature allows the concentration of more heat on spectator seating, for instance, than on the playing area of the floor where less heat is needed. The fixtures are also specially designed to reduce glare in the range of vision to a comfortable level.

Additional flexability is built into the installation's control system. For players who are working up a lot of body heat, as few units as needed may be turned on over the playing area.

RECTANGULAR LUMINATOR infrared fixtures are shown mounted on the Douglas fir ceiling in the gymnasium of Greenville (Ill.) college. Reflectors are positioned to direct more heat to quiet spectators, less to active players.

At the same time, as many units as are needed can be turned on over the bleachers so that spectators are comfortable.

The controls also make it possible to heat either end of the floor when side baskets are hydraulically lowered for intramural basketball games. Overall the system was engineered to provide enough heat so that people inside the building would be comfortably warm even if the air temperature fell to -10°.

Since it warms people and objects instead of the surrounding air, the comfortable warmth of radiant heat is felt the moment the units are turned on. Even with all units operating, however, players and spectators continue to breathe cool air, another advantage that adds to their comfort.

The system also had a few extra advantages not anticipated by Greenville college officials. The gymnasium flooring contractor, for example, said the floor's finish was the best he had ever achieved. The application of the finish on warmed wood and the drying effect of the radiant heat made this possible.

When the new heating system's efficiency is considered in the light of dollars and cents savings, the results are equally impressive. Operating costs for the entire 1960-61 winter heating season were less than $2,000; approximately $600 less than initially estimated and equal to or less than estimated costs for other methods of heating that might have been used in the new building. In addition, the system furnished four to five months of free lighting worth approximately $500.

With a load of 190 kilowatts, the gym system qualified for Illinois Power Co.'s advantageous high-use rate — an important economy factor for the college.

Orr & Sembower Offers Boiler, Burner Leases

READING, Pa.—Orr & Sembower, Inc., has released to its distributors a boiler and burner leasing plan, according to F. H. Klein, president.

The following equipment is available for leasing:

"Powermaster" positive flow packaged automatic boilers—sizes 50 to 100 hp; Powermaster model 3 line of packaged boilers for oil, gas, and combination models—sizes 125 to 600 hp; Powermaster model 5 packaged boilers—sizes 20 to 100 hp; O&S fuel burning systems for use on all types of boilers, furnaces, vats, kiln, kettles, and dryers.

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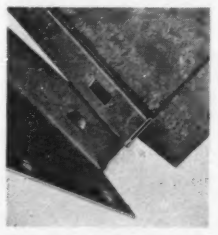
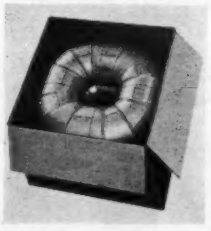


Accurate Fit of the Snaplock Side Joints makes SUREFIT Duct and Stack easy to assemble.



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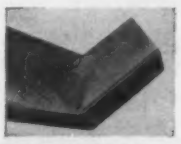
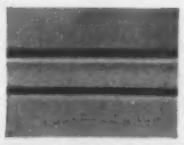
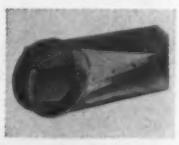


SUREFIT Register Boot, showing the rolled seams and riveted side construction.



SUREFIT Duct, showing the Pittsburgh Lock corner construction.



SUREFIT Angle Register Boot, showing the full throat for unrestricted air flow.

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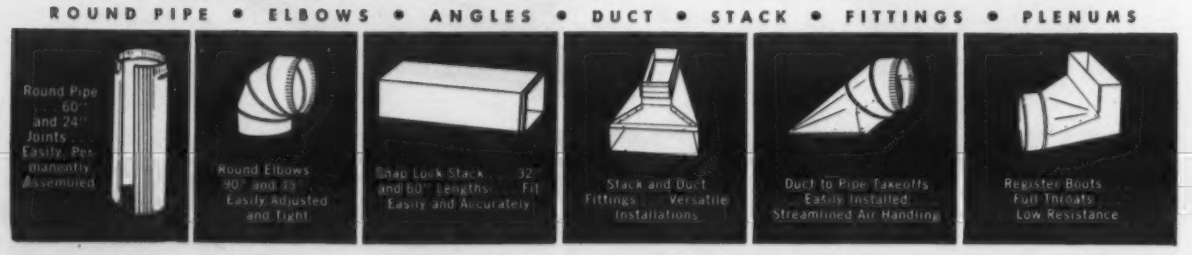
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Residential and Commercial Air Conditioning, by Charles H. Burkhardt. How to size, install, and service systems. Illus. $9.00

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Temperature Measurement in Engineering, by Baker, Ryder, Baker. For laboratory, shop, field. 2 vols.: Illus. Vol. 1, $4.95; Vol. 2, $13.00

Ideas, Inventions, and Patents—How to Develop and Protect Them, by R. A. Buckles, Jr. A broad coverage of patent law. Illus. $5.95

Legal Problems In Engineering, by Melvin Nord. A guide and reference for all engineers to legal principles. Illus. $7.50

1961 ASHRAE Guide and Data Book. The basic reference work for engineers, architects, contractors, manufacturers, salesmen. Illus. $12.50

Advances In Cryogenic Engineering, edited by K. D. Timmerhaus. Proceedings of six national conferences. 6 vols.: Vols. 1-5, $13.50 ea. Vol. 6 (1960), $15.00

One Foot In the Door, by George F. Taubeneck. Authoritative, humorous guide for the specialty salesman. $3.00

Both Feet On the Ground, by George F. Taubeneck. Good reading and expert advice for the specialty selling dealer. $5.95
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Air Conditioning Supply Co.'s Branch In San Diego Designed for Firm's Needs

LIND DAVENPORT, Roy Graser, and Fred Antelline prepare to enter new San Diego branch office of Air Conditioning Supply Co. The building was designed specifically for use of the wholesaler.

LOS ANGELES—Air conditioning, heating, and ventilating specialists, Air Conditioning Supply Co. here, one of The Southland's oldest and largest sales representative firms, has formally dedicated a specially-designed new building for its San Diego branch, President Lind Davenport announced.

Former location was 3752 Rosecrans Blvd.

The new structure, located between Knoxville and Naples at 1179 Knoxville, is adjacent to Highway #101, and borders the Morena Freeway. According to Davenport, the site is at the hub of a fast-developing new industrial sector.

Davenport indicated the combined administrative offices and warehousing plant was architect-designed for the specific needs of ACS, based upon experience gained from other operations. It is already enabling the firm to increase distribution efficiency in the San Diego sector, allowing the extensive stock-piling and same-day delivery on many lines of equipment, he said.

The structure is fronted on two sides by loading docks. Ample parking is provided. Interior offices have been patterned for optimum privacy for each occupant. Mahogany paneling backdrops all interior decor.

A mezzanine deck serves as both a mechanical equipment area and display showcase for some of the products handled by ACS. Among them, a 5-ton "Western" Tuck-Aire condensing unit with Drayer-Hanson air-handling unit, which supplies comfort conditioning to the office; ceiling diffusers, manufactured by Connor Engineering Corp., among others.

Key personnel at the San Diego branch include Davenport, who also administers the main facility of Air Conditioning Supply Co. in Los Angeles at 137 S. Anderson St. San Diego branch manager is Frank Antelline. Roy Graser is application engineer. Ed Law is in charge of shipping and receiving.

The Los Angeles operation of Air Conditioning Supply is comprised of 10 active application/sales engineers, plus supporting administrative and clerical personnel, all under the jurisdiction of Davenport and Vice President Lou Horsefield.

Project general contractor on the new San Diego facility was R. E. Hazard, Jr.; air conditioning contractor was Price & Horton, both of San Diego.

Haynes and Ramey Named by Steveco As Mfrs. Agents

ATLANTA—The appointment of Merle G. Haynes and Del L. Ramey as manufacturers' agents for Steveco have been announced by David M. Lawson, vice president and general manager of B & F Stevens, Inc., owner of Steveco.

Haynes' territory includes California, Oregon, Washington, Idaho, Montana, Wyoming, Utah, Colorado, Nevada, and Arizona. Ramey will cover Texas, New Mexico, and Oklahoma.

Both have been associated with the refrigeration and air conditioning industry for many years. They now represent several nationally known lines of refrigeration components

Steveco distributes fractional horsepower shaded pole and capacitor run motors, manufactured by General Electric Co. throughout the United States, Canada, and Mexico. Sales are made to refrigeration and air conditioning wholesalers, electric motor repair shops, and O.E.M. accounts.

Research Products Adds Pieringer to Sales Staff

MADISON, Wis. — Research Products Corp. here, manufacturer of air filters and humidifiers, has announced the recent addition of Dean E. Pieringer to its sales staff as district salesman.

Pieringer has been associated with the company for the past several months in the home office in Madison. He will serve the Chicago area and will headquarter in Park Forest, Ill., it was announced.

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FOR REFRIGERANT HANDLING & MEASURING EQUIPMENT...

• Charging Stations • Charging Boards • Portable Refrigerant Measuring Tubes • Charging Hoses and Valves • Oil and Methanol Measuring Tubes • Quick Couplers • Tank Stands • High Vacuum Pumps • Manometers • Vacuum Gauges

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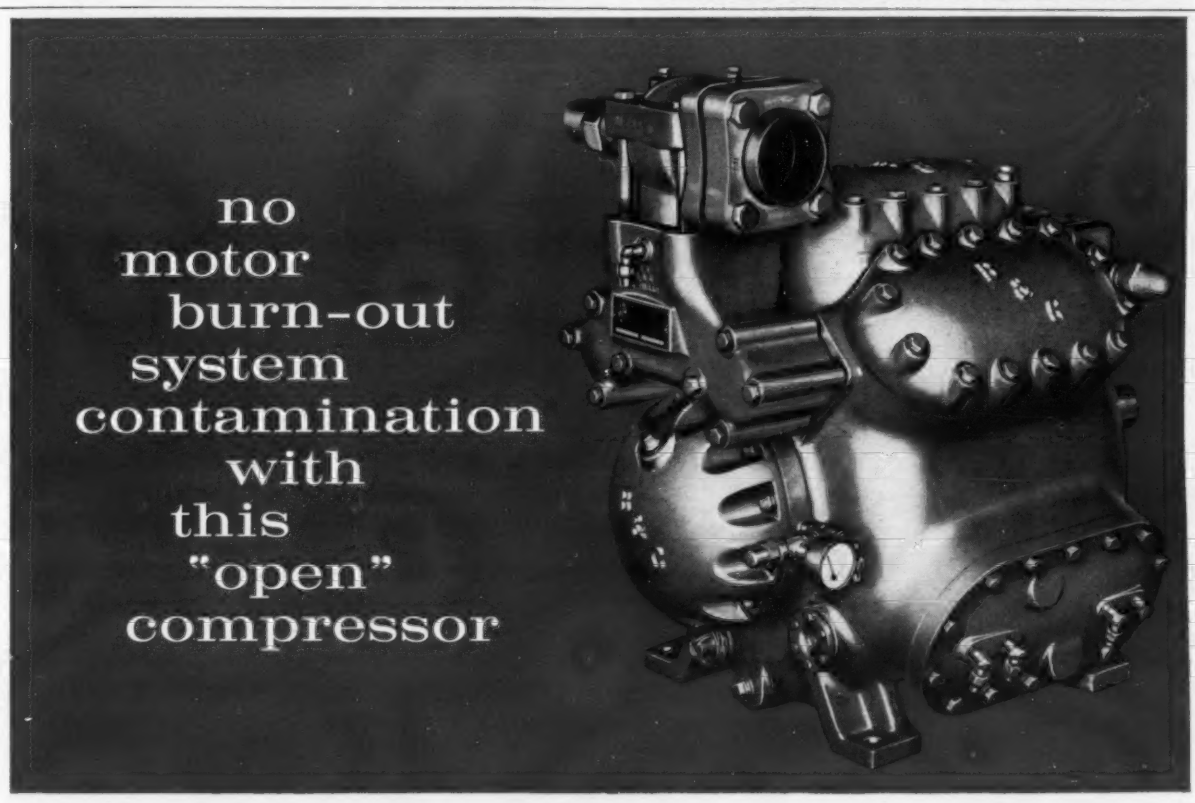

B&G Compressors are built in atmosphere-controlled shops under rigidly checked manufacturing methods. Available in capacities from 7½ to 150 tons.

B&G builds "open" compressors because in actual operation they offer many exclusive and outstanding advantages. Where an open compressor is used, elaborate precautions to evacuate and dehydrate a refrigeration system are not necessary. It can be serviced by the average contractor —no special tools or equipment needed.

Motor burn-out in a closed system leads to system contamination—with an exceedingly involved procedure necessary to clean up the system. This means considerable down-time and possible large loss of revenue or spoilage.

Quieter operation with less vibration are distinguishing features of the B&G Compressor. It is engineered to establish higher standards of performance...ruggedly built for longer life. It has fewer parts, hence presents fewer maintenance problems. All units have *one* bore—a few interchangeable parts will service them all.

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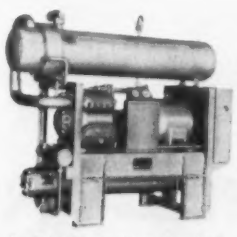
A FULL LINE OF REFRIGERATION AND AIR CONDITIONING "PACKAGES" AND COMPONENTS



B&G Package Liquid Cooler

B&G Evaporators

B&G Centrifugal Pumps

B&G Condensers

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

pounds; in 1958, 469 pounds—almost a bale to the acre.

During the past 20 years, the average yield of corn has gone from 53 bushels per acre to 71 bushels; of oats from 40 bushels to 53.

In the last two decades, the average size of pig litters has risen from seven to eight, or 12 million more pigs a year in the country.

Some years back a hen that produced 125 eggs per year was considered a valuable addition to any flock; now it has to produce 200 eggs or more.

In 1938, the average yield of wheat was 13 bushels an acre. In 1958, the average was 27.3 bushels.

Antibiotics have increased the growth rate of both hogs and cattle; many animal and poultry diseases have been conquered or controlled.

More than 90% of the hay produced on Corn Belt farms is machine-baled today; two decades ago, only 10 to 15%.

Now over 90% of the corn is picked by machines; 20 years ago, less than 30%—the rest was harvested by drudgery and hand labor.

Today a typical Corn Belt farm has two or three tractors and not a single horse. Twenty years ago, there were four horses and one tractor per each.

A farm worker now produces in one hour what it took two hours to produce in 1940, and three in 1910. An individual farmer nowadays produces food and fiber for himself and for 25 other persons.

The story in almost every line of agriculture is the same—more, bigger, better. Although our population has increased by almost 70% since 1920, there just aren't enough of us to consume all this produce!

Possible Solutions

What shall we do about this problem? Many proposals have been offered and tried. Your answer may be as good as any other. Most proposals seem to boil down to one or more of five basic approaches:

1. *Use up the surplus* by gradually reducing parity price supports. Proponents of this solution say that there's no more sense to buying surplus wheat and cotton than to buying autos . . . or surplus bricks . . . or lumber . . . or room air conditioners . . . and storing them at the expense of taxpayers.

2. *Destroy the surplus.* This method might arouse world-wide indignation. America would be censured for destroying food and fiber when so many of the world's people are hungry and poorly clothed.

3. *Donate the surplus* to underprivileged countries. Problem: how to transport and distribute. Not so simple as it might seem, in countries which have neither highways nor railroads nor deep water ports.

4. *Sell the surplus abroad at cut rates.* The problem here is that we'd alienate Canada, Australia, Argentina, and many other valued friends and allies because we'd be undercutting their markets abroad. (Incidentally, we're already doing that.)

5. *Barter the surplus* to countries where unemployment is rampant, in exchange for products from those countries which we can use. The man who figures out how to do this economically will be a real genius.

Every Citizen Can Think

Which is the best solution? You can help to decide. Give some thought to which basic approach—or combination of approaches—might solve or relieve the farm surplus problem.

A suggestion: read the Editorial in this issue of the NEWS. Write to your Representative (Address: House of Representatives, Washington, D. C.) and to your Senators (Address: United States Senate, Washington, D. C.), either offering your own ideas or urging Congressmen to study ours.

If you do this, and if enough other citizens take an interest in this shattering problem, our Government may one day be able to save itself that cool billion it spends each year on excess food storage.

Spoilage and shrinkage losses from these stored crops amounted to $40 million during 1959!

In other words, your elected and appointed officials no longer will be spending $684,000 every six hours of your life—and the sheep you count to woo slumber for six or eight hours may be the nation's only surplus livestock—if you can supply *another* imaginative solution to this frightening problem.

Story of the Week

Normally, the top man in a corporation summons underlings to his office to talk over problems. But not Henry Ford. He went to *their* offices. Henry explained:

"I've found that I can leave the other fellow's office a lot quicker than I can get him to leave mine."

Quotes of the Week

If we pull the blanket of self-righteousness too far up over our heads, it is possible to shut out the entire vista of religion which begins with humility.—DOUGLAS MEADOR.

I have never yet seen or heard anything serious that was not partly ridiculous.—HORACE WALPOLE.

Putting up "a front" (trying to impress people you don't really care about) shortens more lives than cancer.—DR. ERNEST MAYO.

Snobs are people who fear they may be snubbed. — AMY VANDERBILT.

My code of life conduct is simply this: hard work, play to the allowable limit; disregard equally the good and bad opinion of others; never do a friend a dirty trick . . . never grow indignant over anything . . . live the moment to the utmost of its possibilities . . . and be satisfied with life always, but never with oneself.—GEO. JEAN NATHAN.

The worst evil is not committing crimes, but failing to do the kindnesses to others one could do if he weren't so self-centered.—LEON BLAY.

A friend should bear his friend's infirmities. — SHAKESPEARE.

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REFRIGERATION PRODUCTS . . . THE KEY TO A CONSTANTLY CLEAN, DEPENDABLY DRY AND THOROUGHLY EFFICIENT SYSTEM

DRYMASTER BALANCED FILTER-DRIER
Gives superb filtering and drying, protects against acid, moisture and sludge through use of "Hi-Fi" filter block desiccant, superfine monel screen filter tube and inlet distributor disc. Drymasters are available in 59 different sizes and styles with capacities from 2 tons through 165 tons . . . male and female flare or solder-type end connections.

NEW REFILLABLE ANGLE-TYPE DRYMASTER
Gives added convenience—can be recharged in minutes.

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G-E Bows Zonal Air Conditioner That Ties In with Any Type Heating

NEW YORK CITY — General Electric Co. has announced what it calls "an important new approach to zonal air conditioning."

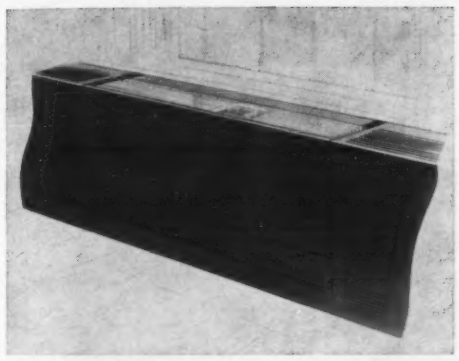
The company said this is "made possible by a new air conditioning unit designed specifically for new construction to meet modern demands for greater capacity, lower noise levels, and longer life."

The new units are available for cooling in Zoneline '42' air conditioner models and for cooling and heating combined in the Thermaline '42' heat pumps.

Both chassis fit the same case and are specially designed to meet the requirements of high-rise apartments, office buildings, garden apartments, hotels, and motels.

The Zoneline '42' models provide every tenant with individual control of air conditioning and heating. Preliminary engineering tests indicate cooling capacities ranging from 8,000 to 14,500 Btu for the new G-E units, it was stated. The company said they offer advantages in economy and controllability over the systems which service entire buildings from one source.

"The G-E zonal air conditioning system can be easily integrated with any type of heating system being considered for a building," the announcement said. "This includes electric heating, hot water baseboard systems, the convector type, and low pressure steam arrangements.



ARTIST'S RENDERING of G-E's new zonal air conditioner, applicable for new construction of high rise apartments, office buildings, and hotels. Unit shown is integrated with heating system. Units are also available as heat pumps in capacity range from 8,000 to 14,500 Btuh.

ENGINEER CHANGES air flow directional adjustment on new "Zoneline '42'." Simple controls appear at top of unit, which brings individual temperature control to each room or apartment.

"With individual cooling units, an entire building is never without cooling as a result of a unit failure. Also, individual metering of each room or apartment is possible with zonal air conditioning."

Among the features of the new air conditioner is an adjustable baffle front which provides the user with alternate air direction flows. In addition, a new positive condensate water disposal system with no moving parts removes condensate by creating a miniature water spout which is blown on the condenser coil as fine mist.

Also, the Zoneline and Thermaline units offer "remarkably quiet operation" due to an oversized plenum chamber, coupled with an advanced design blower and an acoustically insulated interior baffle, G-E said.

"Cooling capacities in the Zoneline '42' Air Conditioner make it possible to keep the atmosphere in living-dining areas clean and at comfortable temperatures with just one unit," the company stated.

"One Zoneline or one Thermaline unit is usually sufficient in an efficiency apartment or motel. In some larger apartments one unit will cool or heat the living zone, kitchen, bath, and hall while a second unit will cool the sleeping zone.

"Operating economies can be effected with the G-E units by shutting off individual rooms or zones. Installation costs are low on the zonal units due to the simple through-the-wall design."

Zoneline '42' air conditioners are available in three cooling capacities: 8,000, 12,000, and 14,500 Btu. The Thermaline '42' heat pumps come in two cooling capacities: 9,000/10,000 Btu and 13,500 cooling/14,000 heating Btuh.

Carrier Dealers Fly To Bermuda, Mexico

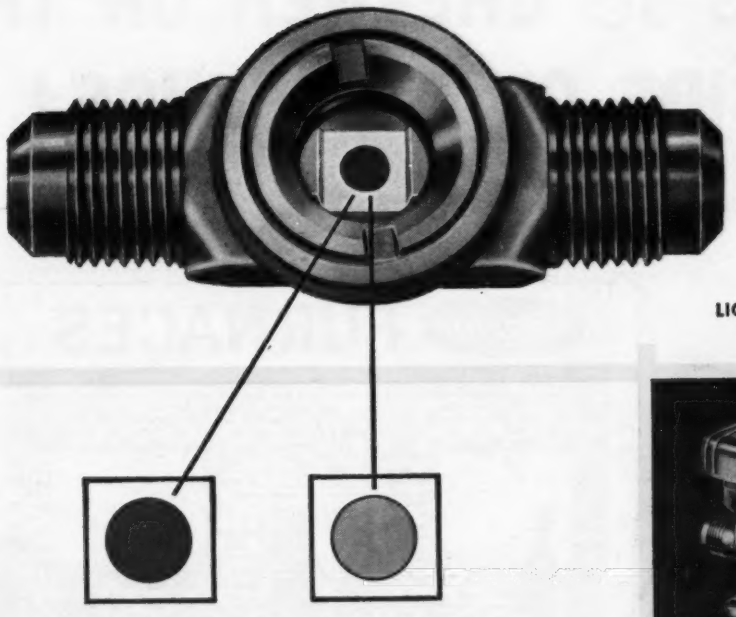
SYRACUSE, N. Y.—Some 500 Carrier Air Conditioning Co. dealers and wives flew to Bermuda or Mexico recently for five days of sight-seeing and entertainment, all expenses paid.

Two more groups of about 250 each departed for the same resorts the following week.

The retailers were the first to receive expense-paid vacations as a result of Carrier's "Corner the Market" incentive program last winter. They won the trips by their early ordering of air conditioning equipment, from room units up through large packaged units.

The Bermuda and México trips were for dealers who gained the "first plateau" of the program in early orders.

Those who reached the "second plateau" by ordering more equipment will travel to Jamaica for seven days in January. A third group of dealers who achieved the top level in early orders will receive a nine-day vacation in Hawaii later that month.



Vuemaster®
LIQUID-MOISTURE INDICATOR

Round blue spot shows the system is full and dry.
Round pink spot shows that moisture is present.

Color spot indicator loses its shape when refrigerant level drops.

This dual-purpose indicator gives the same dependable, leak-proof performance that has made the Streamline single port liquid indicators famous for years but has the added advantage of being a combination moisture and liquid indicator all in one compact unit. A color spot indicator in the new Vuemaster makes possible an instant check of the refrigerant. When the color spot is round and blue, the system is sufficiently charged and the refrigerant is in a normal, dry condition. The spot changes to pink when excessive moisture is present and loses shape when refrigerant supply is low.

Combining engineering skill, experience and quality-controlled production, the Mueller Brass Co. manufactures a line of refrigeration and air-conditioning products that surpasses the most rigid code requirements. Their absolute dependability makes them first choice in any refrigeration or air-conditioning system. Always buy and install Mueller Brass Co. products . . . manufactured in the most complete range of styles and sizes in the industry. Get them at your wholesaler's today.

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Ship 'N Shore Boosts Summer Output 59%; Pressing Room Absenteeism Cut to 5%

UPLAND, Pa.—Since air conditioning its factory here, Ship 'N Shore, quality blouse manufacturer, has improved its production during summer months by a whopping 59%.

It has done this by cutting absenteeism on hot days from 40% to less than 5% in the critical pressing room, improving piecework efficiency by 10%, and cutting trainee drop-outs by 50%.

Because the fall "back-to-school" market is the largest of the four seasonal markets in the blouse manufacturing business, production during summer months is highly essential to Ship 'N Shore.

However, the company found that when temperatures rose above 90°F., the plant was subject to a high absentee rate; about 15% in most departments and as high as 40% in the hot and humid pressing department.

Often the plant had to be shut down entirely. Production losses from this source alone amounted to 15 days during a summer.

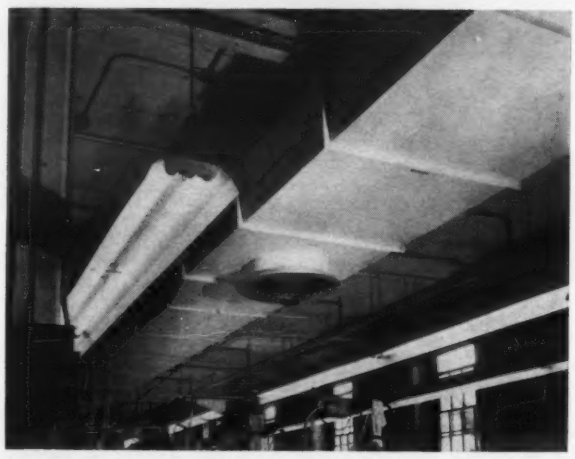
At first, company management thought to solve its problem by air conditioning the pressing department only. This department had by far the highest heat load and accounted for 70 of its 170 employes.

But when it took a hard look at absenteeism in other departments and considered potential production bottlenecks in light of customer demands for prompt delivery, it decided to air condition the entire plant.

To cool the 36,750 sq ft of production and office areas, it purchased a 200-ton centrifugal water chiller to supply 415 gpm of 45° water to cooling coils in ceiling-hung air handling units. Chiller was located in a wing next to the transformer station. A cooling tower was placed at ground level opposite the machinery room.

Total load for the plant was calculated at 191.5 tons. Of this 70.5 occurred in the pressing room. Load breakdown by area is shown in Table I.

Chilled water is supplied to air handling units serving the pressing room whenever outdoor temperatures exceed 48°. For other departments, chilled water is required only when outdoor temperatures rise above 58°. When temperatures are below those levels, outside air alone handles cooling needs.



SECTION of air distribution system. Completely air conditioned plant reduced absenteeism, raised production at this blouse plant.

TABLE 1

Space	Sq Ft	Cfm	Tons
Cafeteria	1750	2,600	15.6
Shipping Department	9000	8,500	19.3
First Floor Office	2000	6,850	19.5
Pressing Room	4500	18,000	70.5
Second Floor Office	2000	10,100	24.9
N.E. Zone Packing	13,000	12,500	25.0
S.W. Zone Packing	4500	7,300	16.7
TOTAL	36,750	65,850	191.5

Why They Like Air Conditioning

Results obtained by Ship 'N Shore from its air conditioning system are:

- **Pressing department absenteeism reduced from 40 to 5%.**
- **Average efficiency increase of 10% per operator, proved by piecework studies.**
- **Substantial reduction in turnover in pressing department, from three out of ten who finished training before cooling, now six out of ten is the average completing their training period. Put another way, half of those who dropped before cooling could have qualified as top producing pressers had the plant been air conditioned.**
- **Absenteeism of other departments dropped from about 15% to an average of 3 to 5%. It's significant that these low absenteeism rates are maintained in a plant in which the work force is 95% female.**

Total investment per manhour amounted to 2.8 cents. Total owning and operating costs of the air conditioning system are 49 cents per sq ft per year, broken down as follows: 27 cents owning (insurance, taxes, principal and interest amortized over 20 years) and 22 cents operating costs (about $8,000 per year).

To dollars-and-cents return, Ship 'N Shore adds these tangible benefits from their cooling.

- **Competitive edge in hiring.**
- **Improved morale.**
- **No tardiness at lunch hour. (Employes prefer cooled plant cafeteria to outside restaurants.)**
- **Less garment smudging during handling, due to reduced perspiration.**
- **Superior, longer-lasting finishes in pressing operation due to lower humidity in pressing department.**

THE GRASS IS GREENER ON THE CARRIER SIDE OF THE FENCE!

Data Processing Center Air Conditioned By Battery of Roof-Mounted Packaged Units

INSTALLATION of the small air-cooled refrigerator units on the flat roof of the computer room at the new Barclays Bank data-processing center, London, England, is shown at left.

LONDON, England — A battery of 30 small packaged air conditioners mounted on the roof is cooling the new computer center for Barclays Bank Ltd. in Drummond St. here.

The center is said to house one of the most advanced data-processing systems in the world, and the method of cooling it is claimed to be a first for the British Isles.

The center will handle centralized bookkeeping of 40,000 current accounts for 12 of Barclays' London West End branches. The data processing system, thought to be the first of its kind in the world, combines a transistorized "EMIDEC" 1100 medium-sized computer and telecommunications.

To remove the heat generated by the computer, the Fan Systeme Div. of W. G. Cannon & Sons Ltd. installed 30 individual 1½-ton air conditioners on the flat roof above the computer room.

Refrigerated air is passed into the conditioned air space around the computer through very heavily lagged concealed metal ducting which was fabricated at Cannon's Merton factory.

IN THE COMPUTER ROOM refrigerated air is passed into the conditioned air space around the computer through very heavily lagged, concealed metal ducting.

By adopting this cooling method, the air conditioning equipment could be installed without especially reinforcing the roof and it had the advantage of eliminating a large plant room and cooling tower.

Static electric nylon mesh air filters ensure that no large dust particles are introduced into the sensitive computer mechanism.

Small separate offices serving the main computer room are also equipped with 1-ton air conditioning units permitting both heating and cooling.

Conditioned air is distributed throughout the building by means of air diffusing outlets flush mounted in false ceiling panels to blend with the general interior decorations.

Now there's better reason than ever why you should jump the fence to a Carrier dealership. It's Carrier's complete new furnace line—completely restyled and redesigned to meet the needs of every customer. Look it over—note the wide range of models and capacities.

But that's not the only reason the grass IS greener on the Carrier side of the fence. Here are 8 more—and the sum total is the best deal you can make in the furnace business.

As a Carrier dealer...

1. You get engineering help from your distributor on difficult jobs. He knows the heating business and he understands dealer business problems.
2. You receive continuous training in the most modern techniques for heating engineering, selling, installing and servicing.
3. You get expert management consultation on any phase of your business operation—accounting, financing, inventory control, etc.
4. You don't have to tie up your own capital in inventory. Under a special Douglas Guardian Warehouse Plan, you get the benefit of having the furnaces you need on hand and yet you pay nothing, not even interest, until the equipment is sold.
5. You're protected against price reductions on unsold inventory.
6. You get the most liberal product warranties in the business. These high allowances assure customers' satisfaction without affecting your net profits.
7. You're backed by hard-selling advertising support—both nationally and locally.
8. As a Carrier dealer, you enjoy unequaled prestige—your products are known and respected nationally and right where that prestige means most for your sales—in your own home town.

Come on over where the grass IS greener. Get the profit picture of a Carrier dealership from your Carrier distributor, listed in the Yellow Pages. Or write Carrier Air Conditioning Company, Syracuse 1, New York.

LOOK!

32 GAS-FIRED AND
19 OIL-FIRED MODELS
IN THE COMPLETE NEW
CARRIER FURNACE LINE

32 New Gas-fired Furnaces

Budget Models:

7 UPFLOW from 70,000 to 120,000 Btu input

6 COUNTERFLOW from 80,000 to 120,000 Btu input

8 HORIZONTAL from 80,000 to 125,000 Btu input

Standard Models:

6 UPFLOW from 80,000 to 185,000 Btu input

5 COUNTERFLOW from 80,000 to 160,000 Btu input

19 New Oil-fired Furnaces

4 UPFLOW from 85,000 to 125,000 Btu output

3 COUNTERFLOW from 85,000 to 125,000 Btu output

7 HORIZONTAL from 85,000 to 335,000 Btu output

5 LOBOY from 100,000 to 250,000 Btu output

Carrier Air Conditioning Company

Nov. 28-30

'Design for Nuclear Age' To Be Topic at BRI Conference

WASHINGTON, D. C. — The need for protection of buildings and their occupants from the hazards of the nuclear age will be discussed in a conference on "Design for the Nuclear Age" as part of the Building Research Institute's 1961 Fall Conferences Nov. 28-30 at the Mayflower hotel here.

The several segments of the conference will be devoted to new factors of environment, design of protected areas, human factors in design, design of a nuclear city, and a comprehensive panel discussion on ways in which to implement the new design.

As one of seven conference subjects, the sessions on design for the nuclear age will be presented simultaneously with half-day, full-day, and longer programs on "Prefinishing of Exterior Building Components"; "Performance of Plastics in Buildings"; "Mechanical Fasteners for Wood"; "Identification of Colors for Building"; "Methods of Building Cost Analysis"; and "New Building Research."

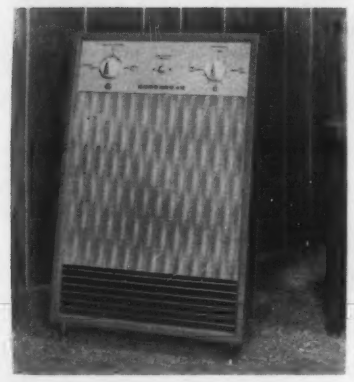
A unit of the Div. of Engineering and Industrial Research of the National Academy of Sciences-National Research Council, BRI makes its conferences open to the interested public as well as to BRI members and their guests.

Copies of the preliminary program covering all conference sessions are available on request from Milton C. Coon, Jr., executive Director, Building Research Institute, 2101 Constitution Ave., Washington 25, D. C.

Carl LaGasse Forms Own Contracting Firm

PHOENIX, Ariz. — Carl LaGasse, veteran of 11 years in the air conditioning industry, has formed his own air conditioning contracting firm, Southwest Air Conditioning, Inc., located at 4130 E. Madison here.

LaGasse, formerly a partner in a local air conditioning contracting company, was for four years a district sales manager for the Air Conditionining Div. of Westinghouse Electric Corp., it was painted out.



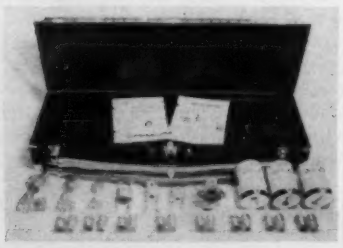
Heavy-Duty Portable Electric Heater Offered

● A new "Regent" model heavy-duty portable electric heater has been introduced by Thermador Electrical Mfg. Co., division of Norris - Thermador Corp., Dept. AH&RN, 5119 District Blvd., Los Angeles 22, Calif.

This "highly-styled" unit does more than provide automatic heating, the company pointed out. A filter-type grille removes dust from the air while a concealed germicidal ultraviolet lamp completes the cycle of two-way air purification.

The Thermador counter - flow principle of discharging warm air at floor level eliminates any possibility of cold floors, it was stated. The versatile unit is also a summer air circulator with air purification. Hydraulic-type thermostat control is another feature.

Heater has 4,800 watt capacity at 240 volts. List price is $99.95.



System Cleaner Kit Introduced

● A system cleaner kit for cleaning up refrigeration systems on new installations, or hermetic motor burnouts, is being offered by Sporlan Valve Co., Dept. AH&RN, 7525 Sussex Ave., St. Louis 17, Mo.

All parts necessary to assemble the system cleaner are stored in a black fiberboard case that is easily transported from service truck to job, the company pointed out.

The system cleaner kit is available in two models. Kit SCK-A contains fittings, hoses, and three RCW-48 "Catch-All" cores — the necessary parts to make up a cleaner.

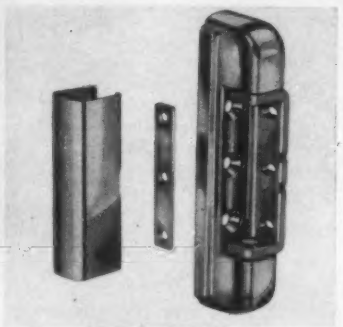
Model SCK-B includes the same parts as "A" plus seven RSV-9 kits and one RSV-5 kit. The extra material permits the serviceman to make up a versatile arrangement of adaptations for switching from one size adaptor to another without additional soldering after various combinations are made, it was explained.

Upflow, Downflow Furnaces Announced

● A new line of "Spacenter" upflow and downflow gas-fired furnaces, in a size range for residential, commercial, and light industrial installations, has been announced by Sequoia Mfg. Co., Dept. AH&RN, 1090 Brittan Ave., San Carlos, Calif.

Units incorporate new engineering and design developments led by Sequoia's recently perfected "Insert Burner."

Adjustable Hinge Compensates for Irregular Door



● A new adjustable hinge that compensates for irregular door thicknesses has been introduced by National Lock Co., Dept. AH&RN, Rockford, Ill. The product is for commercial refrigerator application and allows for an "in and out" adjustment of the door.

The hinge is furnished in three parts. They are identified as an Adjustable Hinge (Part No. 59-299B), Adjustable Plate (Part No. 59-229C), and a cover (Part No. 59-228).

Over-all length of the hinge is 5½ in. Three hold centers are 1 1/16 in. apart. Parts are furnished in bright chrome finish.

Hydronic Zoning Package Comes Fully Assembled

● Using a proven zone valve as a basic building block, Flair Mfg. Corp., Dept. AH&RN, 1720 Atlantic Ave., Brooklyn 13, N. Y., is manufacturing a pre-wired and fully assembled hydronic zoning package, the company announced.

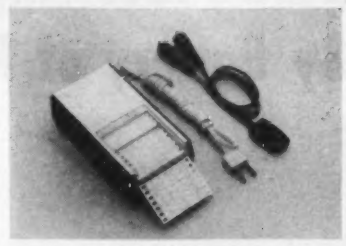
The "Flair-Pac" can be purchased with 2, 3, 4, 5, or 6 zone valves and a variety of hydronic accessories. Electrical problems are avoided and a unique air eliminator is incorporated into the unit, the company said. Installation time for a full six-zone Flair Pac is available from the manufacturer.

Miniaturized Recording Voltmeter Available

● Development of a new, miniaturized precision recording voltmeter has been announced by Amprobe Instrument Corp. (formerly Pyramid Instrument Corp.), Dept. AH&RN, 630 Merrick Rd., Lynbrook, N. Y.

The device, called the Amprobe recorder voltmeter, is "a rugged unit which will make a legible, permanent record on a moving paper tape (2½ in. by 35 ft)," the company said. "It features simplified paper loading, expanded scale, and low cost."

The recorder is inkless. It uses smudgeless, pressure-sensitive paper which is not affected by heat, cold, moisture, humidity, or fumes, and its internal-core meter movement, motor, and chart-drive mechanism are completely shielded by Mylar against dust, even when the paper roll is being changed, the company stated. The paper moves over the meter movement, under a viewing window (through which pencilled notes may be written) and out through a slot.



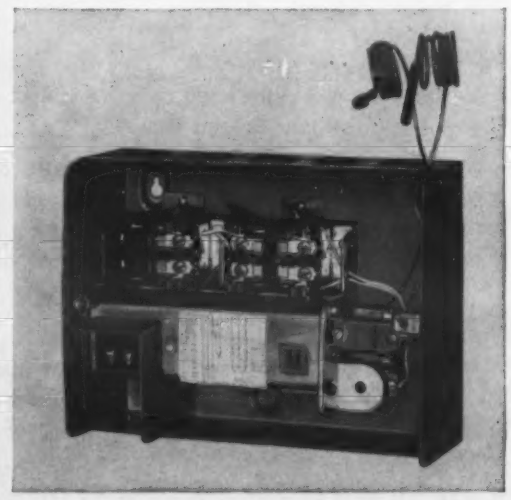
The device is available, complete with leather carrying case, line cord, and test probes, in two models: regular scale: 0/150/300/600 VAC and with an expanded scale (for increased accuracy): 95 to 130, 190 to 260 VAC. Regular scale models list for $79.85; expanded-scale models for $84.85.

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

New designs!

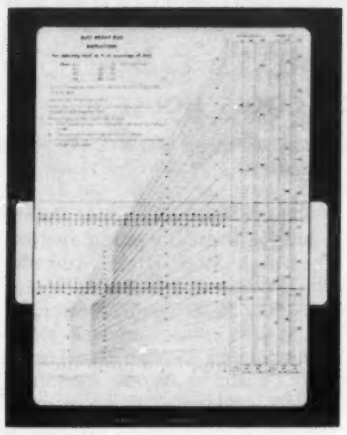
Honeywell now offers a complete selection of panels for 2 to 7½ ton air conditioning systems!

You get the latest improvements in panel design, planned to meet your equipment needs, yet avoid costly engineering and production problems. You cut down on installation time and profit-losing service call-backs because all components and electrical circuits have been standardized and simplified. You simplify ordering, stocking and inventory with single-source responsibility. And you sell *the most complete line* backed by the best name in the business. Call your nearby Honeywell office for details. Or write Honeywell, Dept. AN-1-82 Minneapolis 8, Minn. In Canada, write Honeywell Controls, Limited, Toronto 17, Ont.



PROVED R8100 series panels incorporate all components necessary to control 2 and 3 ton air conditioning systems in one compact unit! The transformer, a single or two-speed fan relay and an 18 or 25 amp contactor are all mounted on a single subpanel. Models are available with time delay, remote reset, and heat pump changeover relays. The same panel can be used for self-contained and split systems. Manufacturers can mount and pre-wire the system at the factory, simplifying dealer and distributor inventory and easing replacement problems. With the indoor fan-center panel eliminated, installation time is cut.

Duct Weight Rule for Heating, Cooling Offered



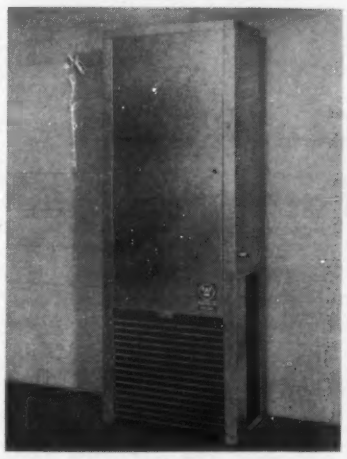
● A new Duct Weight Rule for heating, ventilating, and air conditioning applications is being offered by Carl Raymond & Co., Dept. AH&RN, 3930 North Mission Rd., Los Angeles 31, Calif.

Recommended for use by estimators, engineers, insulation estimators, and sheet metal field and shop personnel, the rule consists of four scales printed on .030 vinyl plastic, laminated with a .002 clear plastic coating. Cursor is made from .020 clear vinyl plastic and laminated with clear plastic coating.

The rule is printed with red and black lines, on white or yellow background. "When cursor is moved to a point where hair line intersects total footage line, the total pounds and square feet of duct is obtained to ASHRAE metal gauge standards," it was stated.

"Duct sizes from 0 to 120 in. semi-perimeter and lengths from 1 to 100 ft. Over-all dimensions 8 in. by 11 in. Also included is galvanized - aluminum comparison chart, prominent sizes of angle iron weights, taping and insulation formulae."

The duct weight rule normally requires about six minutes with no chance of error, according to the company.



NEW COOLING UNIT for central air conditioning, which can be used either singly or in multiples for increased capacity, is now available from the Westinghouse Air Conditioning Div., Dept. AH&RN, Staunton, Va. Known as the "WhispAir" air conditioner (type UB-18A), it is designed for mounting outside on any wall. Details appeared in Aug. 14 issue of the NEWS, page 4.

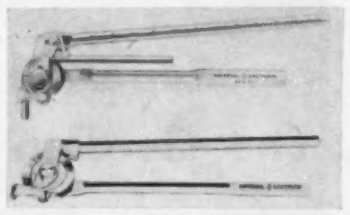
Speed, Precision Claimed for Tube Benders

● Faster, more precise bends is a major advantage claimed for two Imperial tube benders introduced by the Imperial-Eastman Corp., Dept. AH&RN, 6300 W. Howard St., Chicago 48, Ill.

Both benders, the 3-position 364-FH and the double action 464-FH, are said to eliminate troublesome repositioning and handle crossing while making bends up to 270°.

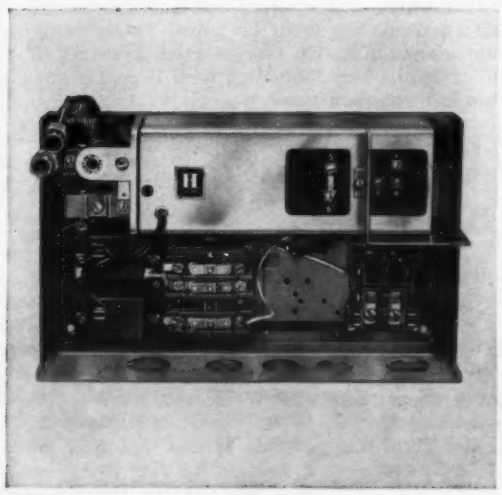
"The versatile 3-position tube bender gives the operator three selective starting positions for bends up to 90°, 180°, or 270°," it was pointed out. "Simple adjustment without special tools allows the operator to make smooth bends of either hard of soft tubing, in one continuous motion. The bender is calibrated for bend angles, available for ⅜, 7/16, and ½-in. o.d. tubing.

"For difficult bending jobs over 90°, the new Imperial double action bender gives the operator maximum mechanical advantage throughout the entire bend. For bends up to 90°, the bender is



used in the normal manner. Over 90°, the pivoted bending handle is lifted and repositioned at the starting point. Bend is completed in practically one motion, precisely and without distortion. Scale on body lets operator read degree of bend at all times. Distance from end to center of bend can be fixed without tricky calculation, using the Imperial Measure-Matic scale on handle. The bender is available for ⅜-½n. o.d. tubing."

Proved performance!



NEW R8200 series panels for 4, 5 and 7½ ton systems combine proven features of the R8100 series with new improvements! These new all-in-one control panels for self contained or remote air conditioning units and heat pumps include UL approvable rainproof enclosures for both the control center and high side panels. Provisions are made for the easy addition of auto-recycling overloads—used with remote reset impedance relay systems. New Class 1 terminals, for tying in a 24 or line voltage compressor protection system, are standard. And models are available with a 14 ampere, 120 volt fan relay rating.

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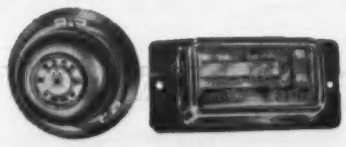
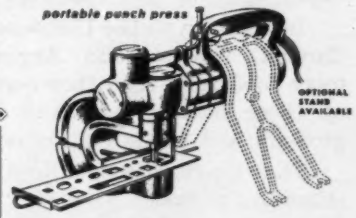


New Y379C Indoor-Outdoor Heating Cooling Control System provides an early warning of changing outdoor weather conditions and automatically adjusts the indoor thermostat to compensate for it.

*Trademark



Portable Punch Press Exerts 6,000 Lbs

● A portable punch press that "exerts 6,000 lbs but weighs only 17 lbs" has been introduced by Modern Mfg. Co., Dept. AH&RN, 680 Davisville Rd., Willow Grove, Pa.

Punch and dies can be easily replaced to punch out round, square, rectangular, or any shape hole up to ⅞ in. in diameter, up to 3/16 in. thick aluminum and ⅛ in. steel, according to the company. The "Porta-Press" can be carried to the job or used on assembly.

'Klip-Kit' Said To Save Time, Materials

● Sheet metal contractors fastening insulation to large-size air conditioning ducts will find the new "POP" rivet "Klip-Kit" installation method will save time, cut material costs, and insure against the problem of loose insulation clogging the ducts, according to the Fastener Div. of United Shoe Machinery Corp., Dept. AH&RN, Shelton, Conn.

The kit contains specially designed long mandrel "POP" rivets that are inserted and set from the same side of the work. The rivets differ from the regular "POP" rivets in that the mandrel does not break after the rivet has been set. These precision-made rivets are in two different lengths for fastening insulation such as fiber glass up to 2 in. thick.

An equal number of co-engineered "Insul-Klips" are included in the kit. These are metal plates engineered to work with the rivets by spreading the high grip strength of the rivets over a wide area of the insulation, it was explained.

Holes are drilled through both the insulation material and the metal duct; the rivets are manually inserted and set with the "POP" rivet hand tool; and Klips are placed over the protruding rivet mandrels, made simple by the pointed tips of the mandrels.

"Klip-Kits" containing 650 Insul-Klips and 650 long mandrel "POP" rivets in two different lengths are available for $13.50.

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

Editorial

Exported Refrigeration Could Cut The Gordian Knot of Our Farm Problem

(Continued from Page 1)

we American taxpayers rid ourselves of our tiresome and costly farmer subsidy program? Can the East-West twain meet under this tent?

That multiple question has a simple answer, which is "yes"—IF our Congressmen are realistic enough to face facts, erase agricultural price supports bluntly, and substitute another program which we shall detail later in this editorial.

In addition to the U.S.A., only Australia, Canada, France, and Argentina produce more foodstuffs than they consume. All five of these nations are both efficient grain growers and cattle cultivators.

They share with us a healthful, progress-stimulating "meat economy." And therein lies a secret of ours, and their success. A "meat economy" insures a high protein diet, which most of the rest of the world lacks. Also it underpins the type of political stability which underwrites democracies.

Our excess grains are fed to animals (cows, swine, sheep, poultry) which provide us with meat, milk, and eggs—a fine high protein muscle-builder diet which helps insure domestic tranquillity. European nations eat well, too (sumptuously, in fact) on virtually the same basic menu.

Canada, Australia, and Argentina have based their advanced living standards upon exports of "primary products" (chiefly meats)—which most of Asia and South America, and all of Africa, desperately lacks.

Examine this sequence: The underfed need meat; America is burying itself underneath unused grains. How can the U.S.A. translate a superabundance of siloed grains into a *largesse* of meats for the presently underprivileged?

Suggestions:

1. Reclassify the word "farmer." Nobody who earns less than 80% of his income on the land should qualify for *subsidies of any kind.* That would eliminate at least two million tax-supported suburban backyards and one-mule "farms," plus the outright chiselers—particularly the Grain Belt small towners who raise unneeded corn and wheat on acre plots and store it in their own bins.

2. Throw out all agricultural support pricing programs. Retain subsidies for retiring large acreages. The profitably managed big farms, which supply 90% of our produce, not only would make out all right, but would be freed from hampering rules and hamstringing bureaucrats.

(Example: Since the end of World War II, support-denied soybean farmers have increased their sales and profits more than 500% without receiving a dime from the Federal government.)

Next, we could invest half the money we now waste on "farm support programs" on building up, and facilitating, export markets in countries which need proteins desperately.

As matters stand now, *it's too expensive to give away our grains to them,* because rundown nations don't have distribution or utilization facilities. They lack harbors, roads, flour mills, meat animals. . . .

What can we do to alter this frustrating situation? First, the underdeveloped nations need more and better ports to receive our shipments of food stuffs, plus roadways to distribute them.

Next, they need "seed" cattle and sheep and hogs and chickens upon which to postulate a high-protein "animal economy." Most important, they will need refrigeration—from warehouse to grocery store to homes.

An "animal economy" depends on refrigeration. Without it, meats and eggs and milk spoil overnight south of the border. Without it, no nation truly eats well.

Foreign aid *investments* in adequate refrigeration, harbors and roads, along with gifts of "seed animals" to our needy neighbors, could make our agricultural surpluses become a postive clincher in the Cold War. Why?

Because these excess grains then could be distributed, fed to meat producers, the meat itself refrigerated until consumed, and thereupon "have not" populaces could change their entire outlook on life. They'd have the will to work, which they now lack.

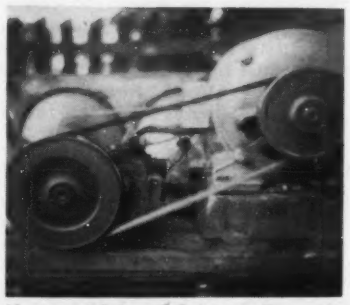
By spreading the "meat economy" idea throughout the world's listless south-of-the-border countries—and making it feasible—we not only could solve our messiest domestic problem, but promote international tranquillity at the same time.

Q.E.D.

AUTO COMPRESSOR COOLS HOUSE

Gilmore Air Conditioning and Heating Service
Nashville, Tennessee

Editor:



Believe you will agree this is a unique central cooling system. Tecumseh Mod. H. H. Automobile Compressor 3 H. P. Motor & 3 ton R-22 condensing unit.

Capacity-wise, my calculations show 27,500 Btu using R-22 with a 36,000 Btu air-cooled condenser. This compressor is driven by 3 HP R. I. motor, single, automotive type, belt drive, 1,500 rpm.

The evaporative blower section consists of 3-ton coil vertically positioned aside gas furnace and tied into supply and return with 100% bypass of furnace.

We are doing a real cooling job on this old solid brick house, plaster on brick with 16-inch thick walls. Storm windows, no insulation, but the entire house, 6 rooms and bath, save a small entrance hall, thermostat set and locked at 76 degrees, and maintaining this temperature, regardless of outside ambient.

We have old-style floor registers, *inside wall,* moving about 1,200 cfm through 6-inch round duct with six supply and single return air through 20 x 25 grille.

We have six kids and plenty traffic in and out, you can well imagine.

JOHN E. GILMORE

OUR ACCURACY IMPRESSES REJ . . . .

. . . Food Stores

Editor:

The accuracy with which you handled our information for your "16,000 Compressors Analyzed" articles impressed us very much. This is not so common in trade journals or newspapers.

If you would like to do something worthwhile for us and the industry in general, why don't you contact all dependable sources and find out how to prevent or reduce refrigerant leaks in refrigeration systems. If you come up with a really good answer, we would donate a monument to you in any location of your choice!

R.E.J.

. . . . BUT NOT BARTO

Atlas Air Conditioning Corp.
Lake Worth, Fla.

Editor:

I noted with interest your article in the Sept. 11, 1961 issue with a picture on page 34 captioned "The world's first heat pump system consisting of only two centrifugal refrigerating machines."

By way of this letter we wish to advise you that the Sears-Roebuck retail store in West Palm Beach, Fla., was air conditioned by Atlas Air Conditioning Corp. in 1956 by two Trane centrifugal compressors operating as the heat pump unit, each supplying 135 tons of refrigeration.

This system has now been in operation for over five years and was featured in the Trane Co. newsletter during the year of 1956.

ROY H. BARTO

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English Electric House Gets Partial Cooling from High Velocity System

LONDON, England—The new headquarters offices of the English Electric Group of Companies erected at Aldwych and the Strand in the heart of London has been partially air conditioned.

Called English Electric House, it occupies the site of the old Gaiety Theatre, which closed its doors in 1938 after entertaining Londoners for 70 years.

The new building, with the previously constructed Marconi Wing, encloses a central courtyard and provides 200,000 sq ft of floor area in the 14 floors from lower basement to roof.

Air conditioning is provided in all offices up to and including the fourth floor. It is supplied by two main plants to each of the two zones into which the building is divided. These are known as the Aldwych plant and the Strand plant. Air from these plants is distributed at high velocity through single duct systems. The maximum designed air velocity is 2,900 fpm.

A third air conditioning plant, designed for conventional air velocities, serves the Exhibition Hall on the ground floor.

The Chairman's Room and Boardroom, constituting the Boardroom Suite, on the third floor, are supplied with air from the main plants, but separate air cooling and heating coils under direct control from the third floor are used.

The high velocity air is fed to large pressure reduction units and sound attenuators on the third floor, from which the supply of air is distributed at low velocity. Air from the Boardroom Suite is not recirculated.

Chilled water coils are served from the chilled water plant and these are in turn followed by hot water coils fed by the hot water storage plant. The insulated ductwork rises through special shafts behind the elevators. Each room is equipped with an attenuator unit which serves to reduce the velocity of the air entering the room and also to damp out any noise from the ducts.

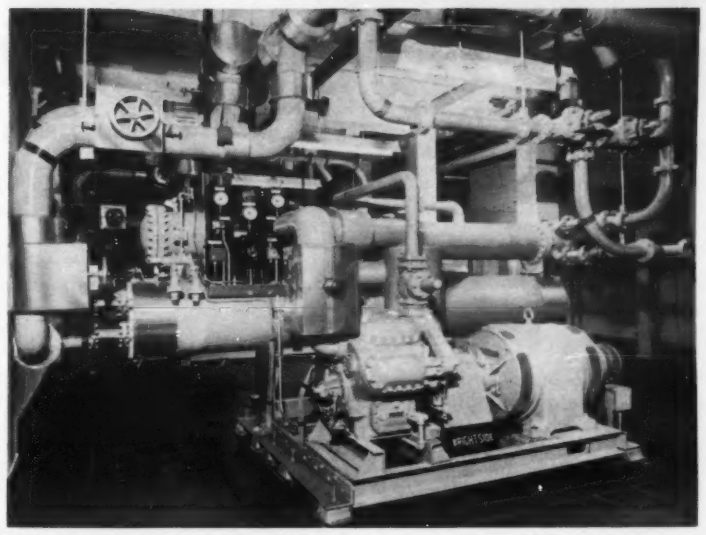
Chilled water is obtained from two packaged water chilling plants consisting of two nominal 50-ton units using Refrigerant 12. Each incorporates an 8-cylinder 3¾-in. by 3-in. York V/W compressor mounted on a baseplate together with its driving motor, evaporator and condenser.

Each plant is automatically controlled and incorporates four stages of capacity control. An induced draft cooling tower integral with the structure of the building serves the condensers. The top of the cooling tower is level with part of the roof and offers no silhouette.

A 1,500-gal. tank for chilled water storage is installed in the refrigeration plant room. It serves as a buffer tank and tends to absorb sudden changes in load. Space has been left for the accommodation of a further main air-conditioning plant and a third refrigeration plant in case it is decided at a later date to extend air conditioning to the upper floors of the building.

Plant for the electric heating system, a sub-station for the electricity supply, the air conditioning and ventilation systems are all housed in the sub-basement. All the services are monitored from one supervisory console.

A specially designed supervisory indication and recording panel displays the operating conditions of every electric motor in the building. Recorders are also installed on this panel to provide permanent records of air temperatures in different parts of the building and those in certain key air ducts and parts of the heating systems.



VIEW OF SUB-BASEMENT where electric heating system, sub-station for electricity supply, air conditioning and ventilation systems are all housed. All the services are monitored from one supervisory console.

Next Michigan Heating, Cooling Convention Set for May In Lansing

DETROIT — Michigan Heating & Air Conditioning Assn. will hold its next annual convention at the Capital Park hotel in Lansing on May 17 and 18, Jay Biddle, secretary, announced recently.

Biddle also announced that the Kalamazoo Sheet Metal, Roofing, Heating & Air Conditioning Assn. has voted to become the seventh chapter of the recently reorganized state association.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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ADD-ON COOLING (2)

Factors To Be Considered To Get Proper Performance

This informative discussion of the factors to consider when adding cooling to an existing heating system was written by Robert Mees, technical training supervisor of Janitrol Heating & Air Conditioning, Columbus, Ohio. Mees began the discussion by listing the questions which must be answered if the add-on job is to perform properly. In this concluding instalment, he discusses cfm requirements, register location, electrical service, and condensing unit location.

To determine the increase in rpm required use again the rpm formula:

Final cooling rpm =

Total cooling cfm required × Present rpm ÷ Cooling cfm obtained after simulated coil resistance was added.

A reading should be made of the motor amperage at this time. If it exceeds motor name plate rating by more than 10% the motor is overloaded and a larger size should be used.

At this point, an optional last test may be made to determine total cooling cfm by the temperature rise method. This is not necessary but may give some peace of mind to the beginner. However, when the coil is actually added to the system and the condensing unit operating. the air volume should be adjusted so that the temperature drop across the cooling coil is 18° to 22° F. Any increase in blower speed required to give this temperature drop will make it necessary to recheck the blower motor current draw to make sure it is not overloaded.

A caution should be made about blower speeds and cfm. Delivered cfm will increase in proportion to rpm up to the design limit of the blower being used. Tbis point varies with different blowers. You can tell when you have reached the usable limits of the blower when changes of rpm give little if any change in delivered cfm.

The other factor is the operating noise level of the blower at the required cfm. If the blower wheel must turn so fast that it sounds like a siren it will result in customer dissatisfaction.

Register Location

Are registers located properly and of the proper type?

The location of existing registers can be very important to the proper operation of the equipment as well as customer comfort.

For an example, low side wall registers usually do not work too well for cooling unless the register louvers can be adjusted to throw the heavier cool air up in the room where it has an opportunity to mix with air near the ceiling.

Unless this is done, the cool air will leave the register and cling close to the floor and spill into a cold air return without ever cooling the room. This results not only in customer discomfort, but causes high operating costs and low suction pressure condition which may cause condensing unit to cycle or lock out on low pressure switch.

Good mixing of the cool conditioned air is necessary no matter what type of registers are used or where they are located. Very often floor type perimeter registers are found located under windows or on outside walls. The very desirable diffusion characteristics of these registers are excellent for both heating and cooling.

However, the face velocities on cooling may be so low that the heavier air may not carry to the ceiling resulting in what is commonly referred to as "Puddle Cooling," a situation where there is a stratum of warm air near the breathing line of a person standing.

A rule of thumb commonly used to determine adequate register face velocities for cooling is 600 to 700 fpm. Heating registers may be adjusted to these velocities by partly closing register valves or blanking off part of the free area of the register on the back side with sheet metal painted black.

A velometer is necessary to accomplish the adjustments properly. Restricting registers too much can cause undesirable whistling noises and for this reason care should be used so as to avoid creating a new customer complaint.

Electrical Service

Is the electric service adequate? What is voltage, phase, and frequency available?

The answer to this question is one of the first ones that should be determined.

Most residential areas in the United States have single-phase power only available. However, in some areas in the South three-phase power for residential use is available. Many power companies throughout the country are studying the possibilities of making three-phase power available to residences.

If it is available without premium costs, use it, as equipment made for three-phase is less complicated and therefore less prone to service requirements.

The next consideration is voltage.

Central air conditioners require either 230-volt single-phase power, or if three-phase is available the voltage may be 208 or 220.

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"We consider Scott Filter Foam an ideal filtering medium for our Foamat unit air filters," say engineers of the American Air Filter Company, Inc., in Louisville, Ky., the world's largest manufacturer of air filters.

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"Another big plus with our customers is that Scott Filter Foam is so readily washable that it presents minimum maintenance problems. Water from a standard spray nozzle is all that is normally necessary. In the case of a particularly stubborn collection, the Foamat unit is easily removed from the frame, dipped in warm water and detergent, and replaced.

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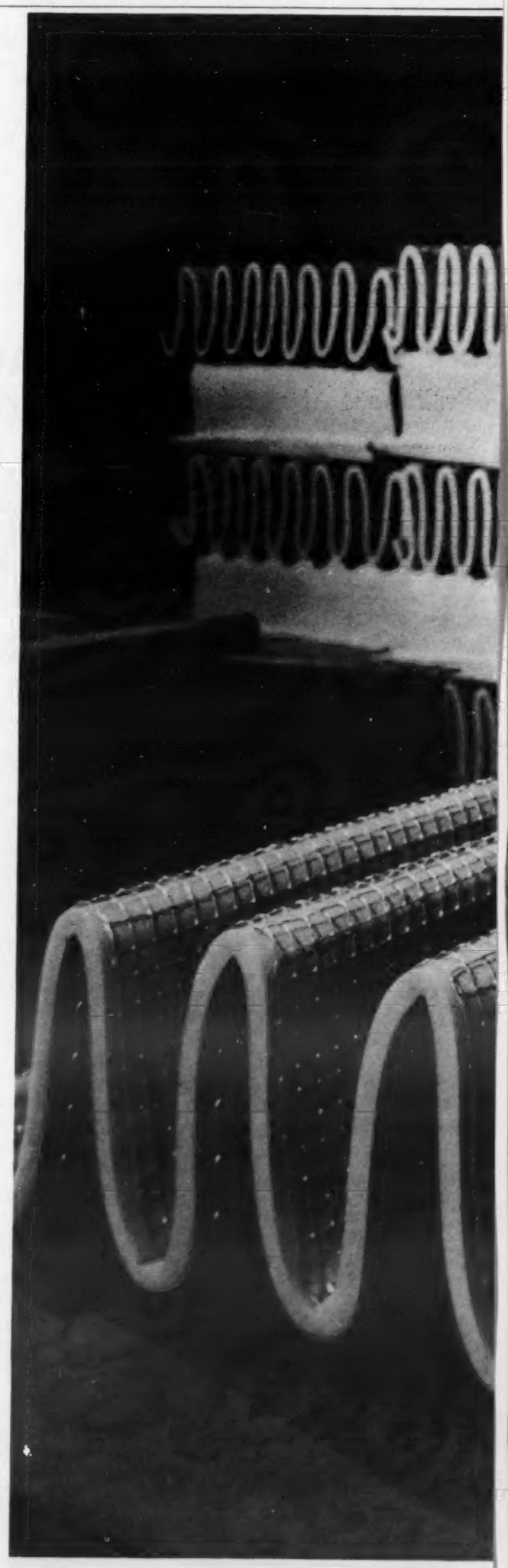

Frequency is universally 60 cycle in this country.

In add-on package jobs, the existing service fixes the voltage and number of phases available and determines the current characteristics of equipment. However, the size of the service may not be adequate. It is common practice in most urban areas today for codes to specify 100 ampere service, whereas five years ago 60 ampere services were adequate. Older construction may have only 30 ampere services available.

In the case of the 30 ampere service, air conditioning should not be added without extensive changes. The service is just too small under any conditions.

The 60 ampere service may be adequate provided other electrical equipment such as electric ranges, clothes dryers, or water heaters are not being used or contemplated in the future.

The 100 ampere service is adequate under most modern load conditions, however some very large homes may require 200 ampere service. Codes and utilities very often dictate what must be done and should always be consulted.

Condensing Unit

Where should the condensing unit be installed: What precautions should be observed?

First consult the building codes for the area in which the unit is being installed. Communities vary widely in what they require; in the way of setback from property lines.

Next pick a spot which will be least objectionable to owner, as well as neighbors from the operating noise standpoint. The equipment **will** make some noise no matter what brand it is.

Avoid locations in a corner formed by "L" shaped homes, wide expanses of concrete such as driveways, patios, and the like. People will still want to use these things even though the house is air conditioned, and remember, the neighbors may not have air conditioning.

Money spent in placing the unit farther from the house will pay big dividends in customer satisfaction and neighborhood tranquility. After all, you may want to sell more units in that same neighborhood. You may also have to justify the additional costs to the homeowner.

(The End)

Sells 261 Cooled Homes

LOS ANGELES—Sale of 261 centrally air conditioned homes in 14 months at Brighton Hills, Montebello, has been reported by Brighton-Bilt Homes.

Priced from $29,950, the homes are offered with three bedrooms and a family room or four bedrooms and a family room and two complete baths.

His Honor Has It

Detroit Mayor Praises Air Conditioning

By George M. Hanning

DETROIT — Proclaiming the week of Sept. 24-30 as Better Heating & Cooling Bureau Week in Detroit held extra meaning for Mayor Louis Miriani. He has just had his home air conditioned!

At the kick-off luncheon, Mayor Miriani waxed enthusiastic about the future of air conditioning here, declaring that the sales surface was only being scratched.

"When Detroiters go out of town and look for accommodations, the first thing they ask is 'Is it air conditioned?', the Mayor declared. "But when they come home, they put up with the heat. What we need is more public education on the benefits of home cooling.

"I hear that air conditioning units are selling by the thousands in Florida and Arizona. Detroiters are going down there and selling them. Now they are finding they can sell them back here, too."

'COST REASONABLE'

The mayor, who had a 5-ton unit installed in his home, confessed that he found his preinstallation fears of major alterations to the home at great expense to be unfounded. "There wasn't much disruption," he said, "and the cost was certainly reasonable when compared to the comfort we have experienced."

The mayor commended the bureau for its work during the past three years to upgrade the quality of home heating and cooling installations through guaranteed design, workmanship, installation, and service.

William H. Carrico, office manager of the local Better Business Bureau, testified that BBB still has to receive its first complaint that the Better Heating and Cooling Bureau did not live up to its guarantee.

George Asher, executive secretary of the BHCB, said that the bureau, a non-profit organization created jointly by Sheet Metal Workers Union Local 281 and the heating and cooling contractors with whom it has a contract, has spent $150,000 during the past three years on its various activities, including educational research and code enforcement.

As part of the week's observance, the BHCB provided advertising and editorial material for a special six-page "Heating-Cooling report" in *The Detroit Free Press* of Sept. 24.

The BHCB advertisement told readers: "Now for the first time anywhere, you can be sure about your new warm air installation, sure of worry-free operation, quality workmanship, materials, and inspection.

"Depend upon . . . Insist upon the Better Heating and Cooling Bureau ABSOLUTE GUARANTEE. Get this positive guarantee or you haven't got your money's worth in warm air heating."

Detroit Utility Asks Early Warning on Cooling Installations To Help Eliminate Delays That Make Customers Unhappy

By George M. Hanning and Hugh T. Mahar

DETROIT — With air conditioning loads on utility lines getting heavier and heavier, it is becoming more important than ever that contractors notify the electric utility before installing cooling equipment, Laurence J. Van Tuyl, declared recently.

Van Tuyl is supervisor of inspection groups, customer services division, for the Detroit Edison Co.

Speaking before the Greater Detroit Chapter of the Refrigeration Service Engineers Society, he pointed out that unless the utility gets advance notice of installations, it may not be able to service them for three or four weeks in the cooling season.

"There is nothing that makes a customer unhappier than to have an air conditioner and not be able to use it," he noted.

This is particularly true of commercial air conditioning, he added, where a new transformer may be needed to handle the additional load or the building may have to be converted from single phase to three phase service.

Because line extension can take 30 days, he urged that they get an electrical contractor on the job as quickly as possible. He also emphasized that delay in taking out city permits can also delay the work.

Van Tuyl advised the servicemen to check with Edison whenever they are asked to install a motor larger than 3 hp in a residence. He further advised them not to use a motor larger than 7½ hp on single phase service.

The heavy starting current causes a voltage flicker which is the controlling factor on whether or not they can be used in a particular installation.

Van Tuyl explained the three service voltages that Detroit Edison provides its commercial customers on three phase (120/240, 120/208, and 277/480) and how to identify them with instruments.

Emphasizing that motors are designed to be operated on a particular voltage system, he warned against using a 220-volt motor on a 208-volt system.

He pointed out that motor voltages are rated plus or minus 10%. Thus a 220-volt motor would have a lower operating limit of 198 volts. On a 240-volt line, there can be quite a voltage drop before reaching the motor's lower operating limit.

But on a 208-volt line, it wouldn't take much of a voltage drop to get below the voltage at which the motor will give satisfactory service.

Van Tuyl said that 112/224 volts at the meter is the lowest service limit the utility will tolerate. If voltage drops lower than that, the utility will do something about it.

Van Tuyl termed the 480-volt service a good motor system. It is used in industrial plants, shopping centers, and some schools. He warned servicemen to make sure they know when they are working on 480, for it is obviously twice as "hot" as 240 volts.

The utility official noted that low voltage usually gets the blame when a motor starts running hot. But, he advised, the serviceman should check on the mechanical load on the motor. He might find that a 5 hp motor is being asked to do the work of a 7½ hp motor.

In response to a question, he explained that a variation in motor current on the three phases is caused by an imbalance in supply voltage.

"There is nothing wrong with the motor in this case," he said, "and you can't blame it on the motor manufacturer. We may be able to balance the supply voltage if the imbalance is too severe. In most cases, the imbalance does not cause trouble."

Asked when reduced voltage starters should be used on motors, Van Tuyl advised that individual cases be brought to the attention of the utility to determine whether a reduced voltage starter is necessary.

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In Whitefish Bay

Noisy Cooling Problem Not So Urgent as Cool Weather Arrives

WHITEFISH BAY, Wis.—The problem of noisy air conditioners which appeared quite urgent in the heat of mid-summer lost its urgency in the chill of late September for this village's zoning, parks, and building committee.

In warmer days, the committee was faced with a number of complaints about the racket some residential air conditioners were making. Citizens thought "there ought to be a law."

The problem of how to tell when an air conditioner is too noisy was given to the committee. The committee has been unable to find any standards by which they can measure air conditioner noise.

The Milwaukee Heating, Piping, & Air Conditioning Contractors Association helpfully advised the village fathers that there was no industry standard on this subject. It offered to furnish village officials with a copy if such standards are ever adopted.

"You know," commented Trustee Bradley D. Hoffmann, who is in the ventilating business himself, "this probably boils down to the fact that the industry is afraid to take the bull by the horns until some municipality forces the issue through adoption of an anti-noise ordinance."

Listening to the radiators hiss, he added, "There is no hurry, is there?"

Chairman Robert J. Strass ruled, "Let's let it sit in committee while we investigate further."

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

Five-Year Protection Plan Offered on Gas Air Conditioner

Warranties are still matters of vital interest in the air conditioning industry. The oft-predicted demise of the 5-year warranty has not yet taken place, as companies vacillate in the amount of protection they offer purchasers of their equipment. There has been speculation that the manufacturers of gas air conditioners would move toward longer warranties, in their belief that absorption cycles will last longer than compression cycles.

In such a context, the following revised "Five-Year Protection Plan" for its gas air conditioner has been issued by Bryant Mfg. Co., Indianapolis.

BRYANT 5-Year Protection Plan

Model 450 Gas-Fired Air Conditioner

FIRST-YEAR WARRANTY—Bryant Manufacturing Company warrants to the original purchaser-user that this product is free from defects in material and workmanship under normal use and service, and any time within one year from the date of original installation will replace without cost any part found by it to be defective. It is the responsibility of the authorized selling agency, subject to the limitations outlined in this warranty, to repair and/or provide for the labor and transportation necessary to replace any new or repaired part or parts furnished by Bryant at no cost under this warranty.

FOUR-YEAR REPLACEMENT PLAN — In addition to the above First-Year Warranty, Bryant Manufacturing Company warrants to the original purchaser-user the absorption cycle to be free from manufacturing defects under normal use and service for a period of four years immediately following the expiration of the above First Year Warranty and will provide without cost any component part of the absorption cycle found by it to have caused it to become inoperative due to manufacturing defects. It is the responsibility of the authorized selling agency, subject to the limitations outlined in this plan, to make available, at no cost, the parts furnished by Bryant. Bryant will allow transportation one way between the factory and its franchised distributor.

This plan does not provide for labor costs in replacing these parts or for other adjustments or service calls.

The refrigeration cycle covered by this plan is defined as the generator, rectifier, analyzer, heat exchanger, trap, chiller, absorber, condenser, and factory installed interconnecting piping included in the unit. This four-year replacement plan does not include such items as, but not limited to, electric components, housings, and controls; gas controls, burners, and piping; casing; fan assembly; refrigerant.

GENERAL TERMS — This Five-Year Protection Plan applies only to Bryant products installed within the boundaries of the continental United States, and only to original parts supplied by Bryant. No labor charges incurred in connection with structural changes, building alteration, replacement or removal of equipment, or rigging and handling are covered by this plan, nor is the repair or replacement of any part which has failed through accident, abuse, misapplication or misuse. Bryant shall not be liable for any special, indirect or consequential damage.

The following are Obligations of Purchaser and, therefore, are not included in this warranty:

1. Failure to start due to voltage conditions, blown fuses or other damage due to inadequacy or interruption of electrical or gas service.
2. Filter replacement or cleaning of coil surfaces.
3. Improper operation of the system due to fouling or restriction of the water circuit by any foreign material shall not be considered a reason for replacement under the terms of this plan.
4. Damage caused by use of Air Conditioning Unit in corrosive atmosphere.
5. Damage caused by accident, alteration, tampering, overfiring, misadjustment, installation or from servicing by other than an authorized agency.
6. Air Conditioning Unit must be readily accessible for servicing and/or repair at all times.

Topham Heads Fedders Pacific Region Sales

MASPETH, N. Y. — Thomas E. Topham has been appointed Pacific region district sales manager for the Fedders Corp. central air conditioning division, according to C. C. Kirk, division national sales manager.

Topham, who has been in the residential and commercial air conditioning field for 23 years, was most recently associated with Soden Wholesale Air Conditioning, Riverside, Calif., as a sales representative.

In his new post, Topham will service Fedders distributors in California, Oregon, Washington, Utah, Arizona, Nevada, New Mexica, and Idaho. He will report to Jerry Lansky, Fedders Pacific regional manager. Topham succeeds B. M. Osborn, who has resigned.

Five year story:
how Amana benefits
from Anaconda
Aluminum
Amana Refrigeration, Inc., Director of Purchasing, Mr. A. C. Schmieder, is shown with coils whose rigidity and resistance to damage is credited to Anaconda Aluminum tempered fin stock.

There's a lot more to buying materials than checking quality and delivery—although Amana Refrigeration, Inc., places plenty of emphasis on both. Here's the story of some extra values Amana gets because, from the inception of their cooling coil production program, Anaconda Aluminum was contacted and permitted to work closely with them.

When the idea was still new, Amana and Anaconda Aluminum worked together to develop use of no-cost fiber cores to protect fin stock. In the same manner, Anaconda Aluminum and Amana developed ways to utilize new alloys. And as Amana's sales grew—and along with this growth the need for coils grew—Anaconda Aluminum also worked with Amana's die suppliers to assure maximum efficiency.

Amana took advantage of Anaconda Aluminum engineers' understanding of metallurgical problems—resulting in a switch to a special temper. Production could be made more efficient, handling problems reduced, and fin rigidity increased. In addition, production problems with heavy gauge material in the refrigeration and freezer department were also worked out as the result of this thoroughgoing partnership between Anaconda Aluminum and its customer.

Providing consistent production help, metallurgical assistance, and extra fast delivery when customers need it is part of the product from Anaconda Aluminum. You get proof of it every time you talk with an Anaconda Aluminum customer. For information, contact your Anaconda Aluminum office or write Dept. AC-10, Anaconda Aluminum Company, Louisville 1, Kentucky.

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Logistics & Economics of Air Conditioning (1)

Why an Induction System Was Chosen for Fireman's Insurance Bldg. With a Discussion of Advantages, Disadvantages of Other Systems

Engineering isn't the only problem in air conditioning existing buildings. Logistics and economics play an important role.

In this article, Richard Graef describes in detail the three types of air conditioning systems considered for installation in the existing 10-story Fireman's Insurance Building in Newark, N. J.

He explains the advantages and disadvantages of each for this particular installation and why an induction system was decided upon. He also enumerates a number of other considerations in selecting equipment and tells why particular items were chosen.

By Richard P. Graef, Project Coordinator, Walter Kidde Constructors

Logistics and economics almost overshadow the engineering problems in air conditioning an existing building.

Unlike a new building where construction proceeds at well defined rates and space is provided in the original design for necessary equipment, planning for an existing building must include not only the equipment design, but a method for installing it that doesn't put the occupants out of business while the work goes on.

Unless the building can be wholly or partially vacated, the air conditioning equipment must be added with minimum disruption of daily routine—not an easy task when air ducts, water piping, coils, controls and filters must be brought into working areas and all traces of the intrusion removed with plaster, paint, and specially designed enclosures.

The task must be accomplished at reasonable cost, even though many operations are performed at night at premium labor rates.

Whether the building is tenant or owner occupied, the air conditioning system should be installed without reducing the productivity of the personnel or robbing the occupants of needed and valuable space.

Economics

Though faced with the above conditions and the additional problem of the short working period between heating seasons, Walter Kidde Constructors designed and installed the 650-ton air conditioning system for the 10-story Firemen's Insurance Building, Newark, N.J. at a cost comparable to a similar system in a new building, except for the added price of building alterations.

Air conditioning for the high pressure induction system cost approximately $1,300 per ton; the total air conditioning project, $1.5 million.

The greater part of the work could be performed only between the end of one heating season in mid-May and the beginning of the next in mid-September.

Most of the dirt and confusion causing operations, such as drilling approximately 700 holes through the floors for piping and air ducts, had to be carried on at night to meet the owner's requirement that the operation not interrupt the company's normal work schedule.

Logistics

Since the building occupied the entire mid-city site, there was very little room for preparing and storing material. Personnel could not be relocated within the building; only the top floor employe dining room—closed for other alterations at the time—and the roof offered space for equipment storage.

As part of the planning a mock-up of one office bay was set up to study piping connections, clearances, and working room required.

All piping and ducts normally fabricated on the site were prefabricated in the mechanical contractor's shop and shipped with matching parts to the site for fast, easy installation.

All sweated joints in the copper water piping were X-rayed for potential weaknesses and possible leaks before final installation of covers to prevent future maintenance headaches.

Imperfections—found in about 10% of the joints—were fixed immediately and re-X-rayed.

RATHER than lift mechanical equipment piece by piece, the mechanical contractor, John E. Joyce, had entire truckload hoisted to roof.

The work schedule at the site, analyzed previously to reduce premium labor costs to a minimum, directed the flow of material and workmen to each bay with components all cut to length, ready for installation without delay.

Planning the System

Though the coordination of the actual installation details was important in preventing ballooning costs, the actual planning and design of the installation gave the owner and designers the major control over costs and results.

Comparison of Costs of Various Air Conditiong Systems Proposed For Firemen's Insurance Co., Newark, N.J.

OPERATION REQUIRED	SYSTEMS: Induction % of Total Cost of System	Fan Coil Change in Total by %*	Low Velocity Change in Total by %*
1. Cutting & Demolition	5.1	**	—3.0
2. Masonry & Concrete	2.6	**	**
3. Plastering	7.1	**	—4.4
4. Acoustical	3.3	+ 3.7	+ 1.2
5. Marble & Ceramic Tile	1.3	‡	—1.1
6. Flooring, Structural Steel, Roofing, etc.	2.6	**	**
7. Painting	0.6	**	**
8. Temporary Work	3.6	**	**
9. Premium Time on 1, 2, 8	6.1	**	—1.9
10. Refrigeration	11.6	**	—1.4
11. Air Handling	25.1	+ 6.1	—2.1
12. Water Piping	6.8	—1.1	—4.0
13. Hot Water Radiation	2.8	**	—2.8
14. Mechanical Changes	0.7	**	**
15. Electrical	3.2	+ 1.9	**
16. Engineering, Incl. prelim.	6.4	‡	‡
17. Construction Fee	4.1	**	—1.0
18. Contingency	6.9	‡	‡
TOTAL	100	116	80

*Variation from cost estimate for induction system. **Less than 1%. ‡No change.

Six different air conditioning systems were considered, and cost and functional comparisons were drafted.

In conferences with the owners three basic criteria were established for judging the proposals. The system was to provide:

1. Satisfactory operation with good air distribution and temperature control.

2. Flexibility of building occupancy to allow offices to be shifted, partitions changed, personnel and equipment densities varied.

3. Minimum future obsolescence and maintenance.

Systems Considered

The three types of air conditioning systems studied in detail were:

1. High velocity induction system installed on the perimeter under the windows, supplemented with low pressure air handling units on each floor for the elevator lobby and the interior office space.

2. Fan coil under-window units with high velocity ventilation air diffusers at the ceiling, also along the perimeter of each floor, and with the same supplementary equipment for the elevator lobby and interior office space.

3. Low velocity ducts along the ceiling of each floor supplied from individual air handling units on each floor piped to central chilled water and steam sources.

Cost Variations

Original estimates showed that installed cost of the induction system would be approximately 16% less than the fan coil system and 20% more than the low velocity system.

Of the total $1.5 million estimate for the induction system, only slightly more than 50% was due to the components of the air conditioning system—refrigeration, air handling, piping, and mechanical changes—the rest of the budget going for building alterations required to make room for the system.

Comparing the three systems analyzed, the largest variation —4.5% of the cost of the induction system—was the saving offered by the reduced amount of plastering required with the low velocity system.

The only other large savings promised by the low velocity system was a saving of 4% of the total due to the smaller amount of piping required and a saving of 2.8% made by keeping the 30-year-old radiator heating system.

All cost variation percentages are calculated on the basis of the net increase or decrease involved in a particular proposal viewed against the total cost of the installation of the induction system.

In other words, where the low velocity duct system is estimated to cost 20% less than the induction system, that saving is due, in part, to savings of 4% because of less plastering, not a 4% cut in plastering costs.

A complete comparison of the variations in cost for the three systems is displayed in accompanying table.

Interestingly enough, most of the variations between the induction system and the low velocity duct system are not due to variations in the cost of the air conditioning equipment itself, but to the operations required to fit it into the building.

The cost variations between the cost of the inductions system and the fan coil system were due to more extensive acoustical treatment of the high velocity ventilation system, a higher cost air handling system, and the additional electrical work required in bringing power to each of the fan coil units under the windows.

Operational Considerations

Cost was not the prime criteria for the choice of system, however. Major consideration was instead centered on how well the system would work, and what the installation would contribute to the appearance.

(To Be Continued)

Project Rainbow has everything! Dazzle and depth are part of Typhoon's master sales plan to make this your most glittering season. Join the project. Take advantage of every Typhoon aid. Your pot o' gold at the end of this Rainbow would make even Midas blush! **Why Project Rainbow?** Typhoon's Master Plan sweeps across the entire sales horizon—product, sales development, advertising, promotion, sales training, finance, everything to conquer every problem! Dazzling new for '62—the Typhoon Rainbow line encompasses the widest range of air conditioners, heat pumps and furnaces in the industry. 24 new models over 1961 bring the Typhoon grand total to 197. There's a superior Typhoon unit for every need, every installation. You need never miss a sale! **Flexibility fans out like a Rainbow!** Typhoon alone is able to offer custom-built units at mass production prices. At little or no extra cost, you can furnish tailor-made equipment to fit the job. You get a competitive advantage...plus pot o' gold profits! **A whole file of financing plans.** Many payment plans make it easy to do business with Typhoon. Make it easy for your customers to pay, relieve you of financial strain. Help you take the big, profitable jobs. **Far-reaching sales help.** We go all-out for you! We offer materials to train your salesmen. Help plan your selling program locally. Do your selling for you nationally, to the major chains. **PLUS: a Pot O' Gold promotional program.** Typhoon has developed a profit-in-promotion formula that covers the promotional globe...leads to that pot o' gold for you. National advertising. Month-by-month local promotions. Specialized programs to sell every segment of business. Sales promotional tools, ideas, aids—professionally planned and executed. All colorfully shown in Typhoon's "Year 'Round Sales Promotion" Kit. **You reign in Spain!** Olé! Trips to glorious Spain just waiting to be won! Madrid, Toledo, El Escorial, here you come! You have, right through your peak selling season until June 30, 1962, to pile up the points that will jet you to Spain! **Jump at your golden opportunity...Join Project Rainbow!** From every angle, Typhoon distributors enjoy a real plus in product engineering, promotion, salesmanship, and profits. For more information about Project Rainbow and a new Reference Chart on the Complete Line, use the collect telegram, or call or write. TYPHOON AIR CONDITIONING DIVISION • DIVISION OF HUPP CORP. • 505 CARROLL ST., BROOKLYN 15, N.Y.

WESTERN UNION TELEGRAM

Collect

Typhoon Air Conditioning Division,
Hupp Corporation
505 Carroll Street
Brooklyn, New York

Rush me full details on a Typhoon distributorship.

(your name and address)

TYPHOON

Division of HUPP Corporation

'Heat Pump of the Month' Installed In Florida School

HAINES CITY, Fla.—An installation at Bethune Elementary school here was cited recently by Florida Power Corp. as "Heat Pump of the Month."

The utility noted that the school continues to expand its climate - controlled classroom space with the addition of four new classrooms. These rooms are air conditioned the year round by "Weatherking" package heat pumps.

"The flexibility of these heat pumps has allowed the economical expansion of this school as required, since the heating and cooling system growth can parallel the growth of the school.

"The school now has ten classrooms enjoying year-round comfort with heat pumps. The completely independent operation of these individual units . . . frees each teacher to control the system as her classroom requires."

5 Escon Plastics Get NSF Seal of Approval

NEW YORK CITY — Enjay Chemical Co. has applied for and received the Seal of Approval of the National Sanitation Foundation Testing Laboratory, Inc. for five of its "Escon" polypropylene grades, it was announced by Charles E. Farnsworth, manager of the Enjay Plastics & Resins Div.

According to Farnsworth, the five grades which have been found to comply with the N.S.F. Laboratory's standards after Chemical and organoleptic testing are: Escon 113, 114, 115, 117, and 125.

"N.S.F. approval," Farnsworth pointed out, "is highly regarded by manufacturers of pipe, food service equipment, commercial and domestic cooking equipment, dishwashing machines, and freezers.

Add Cold Storage to Existing Building with Insulated Panel

CAMDEN, N. J.—A new type of self-supporting, lightweight, insulated panel has enabled M. Bloom & Co. here, distributor of frozen food and produce, to install a cold storage warehouse in an existing building at a substantial saving, according to Armstrong Cork Co.

Temperature in the room, which is 30 ft by 36 ft by 10 ft, is held at -28°F. The room was installed by Bonwil Refrigeration Co., Camden, with a saving in both time and labor, it was stated.

The new panels called Thermoplastic Insulation Panels, manufactured by Standard Thermoplastic Corp. of Gloucester, N. J., were used for the floor, walls, and ceiling. The panels consist of 3½ in. of a mold blown urethane called Armstrong "Expandofoam" molded between ¼-in. plywood and aluminum foil facing under heat and pressure.

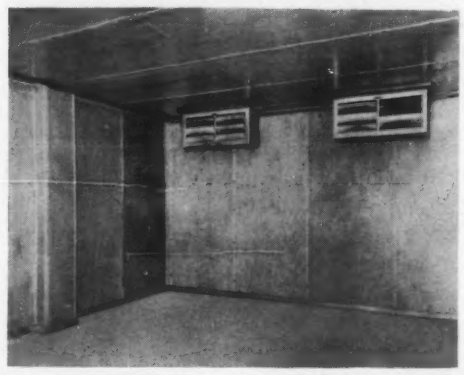
They are available in sizes of 4 ft by 12 ft, 4 ft by 11 ft, 4 ft by 10 ft, 4 ft by 8 ft, and 4 ft by 7 ft. Other facings and core designs are available for special applications.

Standard Thermoplastic designed the panels with shiplap joints to make the panels airtight and to minimize fabrication on the job. A rubber based mastic was used at the joints.

The panels are lightweight—a 3¾-in. thick, 48-sq ft panel weighs only 44 lbs—and strong enough to stand alone, Armstrong Cork said. In the cold storage room at M. Boom & Co., the panels were screwed to wood studding. Alternate methods of fastening are available.

An additional advantage is that the panels can be taken down and moved to a new location at a later date if necessary without loss of any material.

The wearing surface of the floor is concrete poured over the Thermoplastic Insulation Panel. The interior was finished with quarter-round molding.



LEFT: THIS cold storage warehouse was constructed in an existing building with a new type of self-supporting, lightweight, insulated panel said to cut construction costs in half. Panel consists of 3½ in. of mold blown urethane sandwiched between ¼-in. plywood and aluminum facing.

ABOVE: THERMOPLASTIC insulation panels are light enough for one man to install. Insulation value is equal to double the thickness of conventional insulation, according to manufacturer, Standard Thermoplastic Corp. Installation was made at M. Bloom & Co., Camden, N. J.

Motor Hotel Group To Participate In '62 NRA Convention

CHICAGO — The American Motor Hotel Association will participate in the 1962 convention of the National Restaurant Association, it was announced recently.

In a joint announcement, Ralph B. Smith, NRA president, and Glen Hopkins, AMHA president, said the two organizations had agreed unanimously it would be to the advantage of both organizations and the exhibitors to have the AMHA take part in the NRA show.

Next year's convention, to be held at Chicago's McCormick Place, May 22 through 25, will have a special section of the exhibit floor assigned to the AMHA for motel exhibitors.

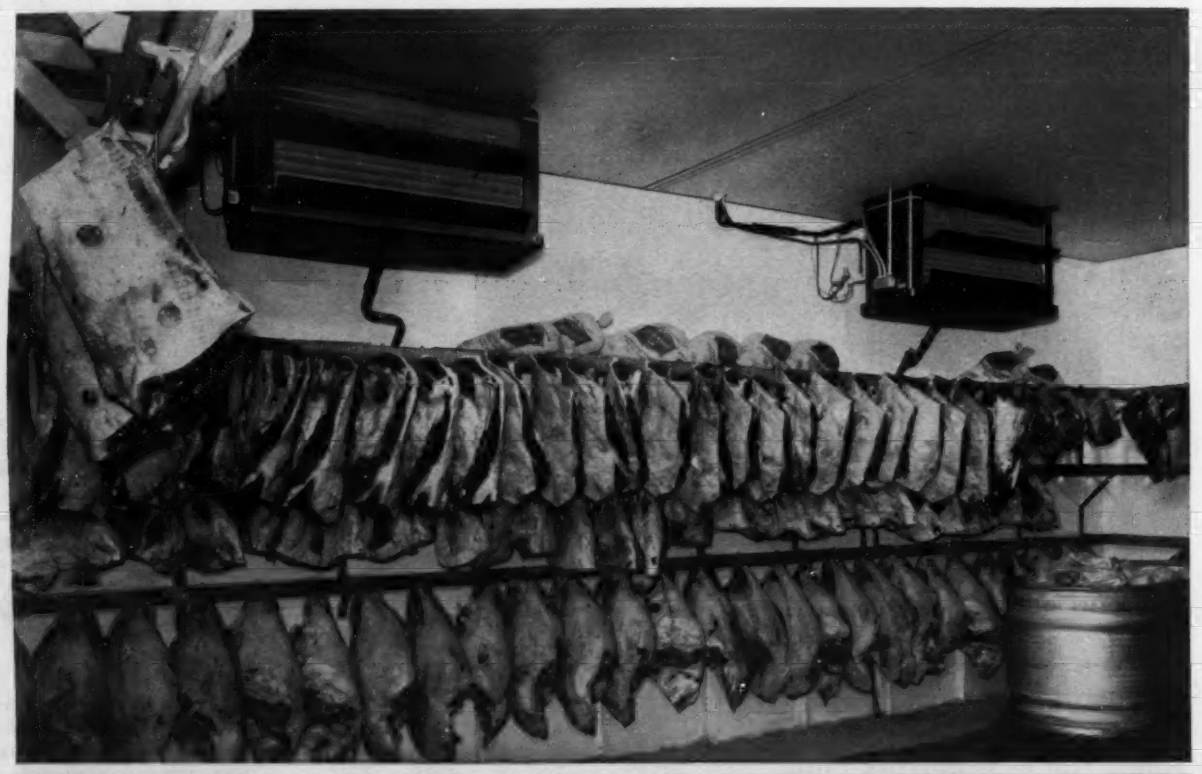
The NRA will continue to manage the show as it has in the past. This will be the 43rd annual convention and educational exposition.

The AMHA is the national organization of the motel industry, which last year grossed $3.5 billions, and in the past has presented the only national convention sponsored by the motel industry, it was stated. This year's convention will be held Oct. 26-28, at the Sheraton hotel in Philadelphia.

It was pointed out by Hopkins that presently one in four AMHA members operate restaurants in their motels.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!



LARKIN MLT meat storage program saves money for retailers, makes money for refrigeration dealers

The retail meat industry is extremely enthusiastic about Larkin's new program for proper meat storage using the new LARKIN MLT System.

Astonishing graphic proof of the results obtained in two years of research and testing have sold this system to large chain and independent operations. Here's what the system does:

- CUTS MEAT SHRINKAGE
- REDUCES TRIMMING WASTES
- RETAINS BLOOM OF MEAT
- IMPROVES SHELF LIFE
- INCREASES PROFIT

The industry is buzzing. Stores are not only adopting the program for new construction but are also finding it profitable to convert existing systems.

LARKIN is ready to help you capitalize on this *new* source of revenue. Literature that tells the story, *sells your prospects*, is available to all LARKIN dealers.

Get in on the ground floor. See your wholesaler or write direct for Bulletin MLT-1061.

WATCHDOG OF THE NATION'S FOOD AND COMFORT — LARKIN

LARKIN COILS INC.

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ATLANTA 1, GEORGIA

Properly Tempered, Thoroughly Filtered Air Vital to First Ballistic Missile Sub

MAINTENANCE MAN tapes in Ulok filter pads aboard new ballistic missile submarine. The crew and sensitive equipment aboard the ships require air conditioning and efficient filtration.

NEW BRITAIN, Conn.—Air conditioning and efficient air filtration are vital in the operation of the *U.S.S. George Washington* — the nation's first ballistic missile submarine. Properly tempered and thoroughly filtered air are vital for both the 100-man crew and the sensitive electronic equipment carried on the submarine.

Air conditioning is supplied by a 300-ton Carrier system. The supplementary air filtering system consists of Ulok panel filters with Dynel modacrylic filtering medium.

The twofold importance of the air treating system rests on the following considerations: the length of underwater operation is limited almost solely by the human factor; and sensitive electronic equipment must be kept free from contamination.

During its record-breaking 67-day underwater patrol, the 10 officers and 90 enlisted men aboard were faced with an exceedingly strenuous schedule. And the matter of providing proper air conditions was just not a matter of confinement to small quarters, the crew was primarily dependent on recirculated air for oxygen.

At the same time, the critically-balanced operating equipment had to be maintained at peak efficiency. This equipment includes: a newly-developed gyrostabilizer to keep the ship steady in rough seas; a system of gyroscopes and accelerometers that provide a continuous report on the ship's position and movements; a pressurized, water-cooled nuclear reactor; super-low frequency radios; sonar devices; and 118 electric motors.

Highly-sensitive equipment also controls missile firing. Each missile is powered by solid rocket fuel motors and guided by a self-contained inertial guidance system independent of external commands or control.

The central air conditioning system utilizes two vaneaxial fans in series as prime movers. Air is drawn from a compartment (gyroroom, missile control center, periscope room, crew's quarters) and then passes through the Dynel modacrylic fiber filtering medium supplied by Union Carbide Development Co. It is then chilled or heated and returned to individual compartments via supply ducts.

The chief materials that must be filtered out when the submarine is cruising submerged are cigarette smoke, cooking grease, lube oil, and like impurities. During the 67-day undersea voyage, some of the filters were not touched, since they were demonstrating that they were continuing to provide efficient filtration.

Others were vacuum cleaned as many as three or four times, and this feature helped eliminate a storage problem.

When the submarine is surfaced, dust, dirt, and numerous other impurities must be kept from entering the ship. This was especially true also during construction, with the work producing welding grit, fumes, hair from power brushes, and related contaminants, plus the usual impurities found in shipyard operations.

Active Fireproofing & Duct Cleaning Corp. of New York, who contracted to provide maintenance of all ducts on the *George Washington* during construction, recommended the use of the Ulok panel filters.

Dunham-Bush Names Arnold A. Granke

WEST HARTFORD, Conn. — Dunham-Bush, Inc., announced the appointment of Arnold A. Granke as sales engineer in Wilmington, Del.

He will handle the company's air conditioning and heating products in this area. Granke was formerly associated with The Trane Co.

Watsco Building New Facility

HIALEAH, Fla. — Watsco, Inc., here has started construction on its ultra-modern 35,000-sq ft plant-office building scheduled for December completion.

Located in Hialeah's newest industrial area, the factory, warehouse, and offices will be completely air conditioned.

In addition to modern secretarial and executive offices, the interior will house an employes' dining room and lounge, a spacious conference room, and fully equipped testing and experimental laboratories, the company pointed out, adding: "The new building is the first step in Watsco's giant expansion program."

William Wagner, company president, stated that "the new facilities will enable us to produce many new items."

SELL THE HIGH PROFIT LINE!

Walton HUMIDIFIERS

RESIDENTIAL—COMMERCIAL
27 MODELS FOR EVERY TYPE OF HEAT AND EVERY NEED
Walton LABORATORIES, INC.
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are the PERFECT PAIR *for* PEAK PERFORMANCE

. . . they're designed to fit each other for smoother performance

Sporlan Thermostatic Expansion Valves have proved to be the leader in the refrigeration and air conditioning field . . . and Sporlan alone offers you the tremendous advantages of the distributor with the Versatile Interchangeable Nozzle. It too has been the leader for many years.

No wonder then, that together they make the perfect pair for any installation.

Available in any combination of circuits and capacities, in flare, solder or flange connections.

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Servicemen In Panama

Service Managers Earn Points, Win Trips

By Frank J. Versagi

PANAMA CITY, Panama — Service managers, as well as salesman and dealership owners, are flying to Jamaica and Panama these days. Dealers have won such trips by selling much; the service people have won by servicing well.

"This is one way in which we can show adequate recognition that we consider service to be greatly important in the overall concept of distribution and merchandising. Such a concept makes it natural then to reward outstanding service performance, as well as sales performance."

Speaking is Bob Rivett, national service manager of Gibson Refrigerator Div., Hupp Corp. Bob had just introduced the NEWS to two winners of the Jamaica-Panama trip and was explaining what service managers were doing at a dealer shindig.

"For several years now, we have conducted a contest for distributor service managers. In a sense, they earn points by performing some of the functions we consider important in their, and our, ability to render adequate customer service," Rivett explained.

Evaluating Service Managers

Among the items which are considered in evaluating service manager performance:

● Attendance at service schools: "This is very important; it is necessary for the distributor service manager to be thoroughly familiar with our products and service techniques so that he may, in turn, relay the information to dealer service people."

● Holding dealer service training: "It follows that we want him to reach dealers with information actively and consistently. The best way to accomplish this is to conduct service training at the dealer level."

● Promptness in handling complaints: "From Rivett's explanation of this factor, it would seem to be an indirect measurement, for it is based on how many complaints of poor handling of complaints which the factory receives.

● Accuracy, neatness of parts ordering:

● Inventory of parts: "These two items, of course, are related. There are forms which make inventory keeping easy; there are procedures which facilitate acquistions of parts. We can tell if such procedures are being used effectively." The return of parts is also considered in evaluating service performance.

12 Honored This Year

The number of service managers recognized by Gibson has increased each year since the program of recognition was inaugurated. This year, Gibson has honored 12 service managers. The first four won a trip to Jamaica and Panama for themselves and their wives. The second group are given the trip, sans wives. The remaining winners are given a choice of appliances.

"All of this recognition has renewed the interest of the service manager, and what is equally important, has renewed the interest of his management in proper service," said Rivett.

What Kind of People Win These Trips?

What kind of people win these prizes? The NEWS met two of them.

First, there was Homer H. Wittes, service manager for Toledo Appliances, Inc., Toledo, Ohio. Homer is a quiet man, reluctant to talk about his work, especially when it came to talking to the press. Which of the several factors listed by Rivett does Homer think most important?

"Promptness in handling service calls.

"I find nothing irritates a customer more than to have delays occur during the servicing of her equipment or appliance. The way I see it, any problem not taken care of becomes a *big* problem," said Wittes.

Wittes was in close competition with the second service manager we met, John G. Sarrazin, Peninsular Dist. Co., Detroit. John, too, is rather quiet in casual conversation, but his eyes sparkle when he talks service. It became obvious, in listening to Sarrazin, that the usual complaints about inconsiderate and unsympathetic customers are accepted by him as part of an exciting job in human relations.

"The big problem in service work is communications," he says. "And I mean communications within one's own organization as well as between the serviceman and the customer and between the manufacturer and the distributor or dealer. I think a major part of the reason for our success at Peninsular is that we do maintain good contact between the service department and the sales department and the accountant and the purchasing agent and the executives."

Just Concentrates On Doing His Job

When asked what factor he thought was most important in his winning the trip to Jamaica, John couldn't pick one. "I wasn't thinking of winning a trip; I was thinking about doing my job," he said.

But his wife, Lois, was thinking about winning a trip! Although the Sarrazins had won a double trip before, she came down on her own this time, because John had won only enough points for a single trip. "I have a kitchen bulletin board," she told the NEWS while both were trying a calypso, "and I keep factory notices of contest progress there for us to see and talk about."

Lois keeps promising herself that she won't look forward to the next year's possible trip abroad, but admits it's hard to keep that promise.

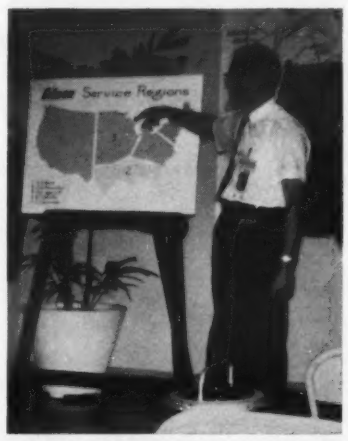
Gibson Service Policy

Rivett broke up the dance party with his summary of the service policy of Gibson. "We have divided the nation into five zones, each with its own service manager. Working with the distributors in his area, the regional manager can expedite parts and service through the distributors, whom Gibson considers *focal points* in providing good service.

"We suggest strongly that first year service contracts be sold, because it leaves a bad taste in the customer's mouth when she has to pay for service during that first year, even if she has been told that she will have to, should the need arise.

"Gibson is also suggesting that distributors look into and work closely with independent service organizations where such companies become necessary or desirable. We want them to get a free flow of parts, product information, service data so that they think highly of Gibson. Their high regard for us will rub off on our mutual customers.

"Training comes a little hard at first," Rivett concluded, "but there is no escaping the fact that it pays to coax, urge, shove men through to the point that they suddenly feel pride in their work, in the products they are servicing."



BOB RIVETT, Gibson service manager explains to dealers the regional breakdown and location of regional service managers during a dealer convention in Panama.

Weathermatic Names Manny Kern

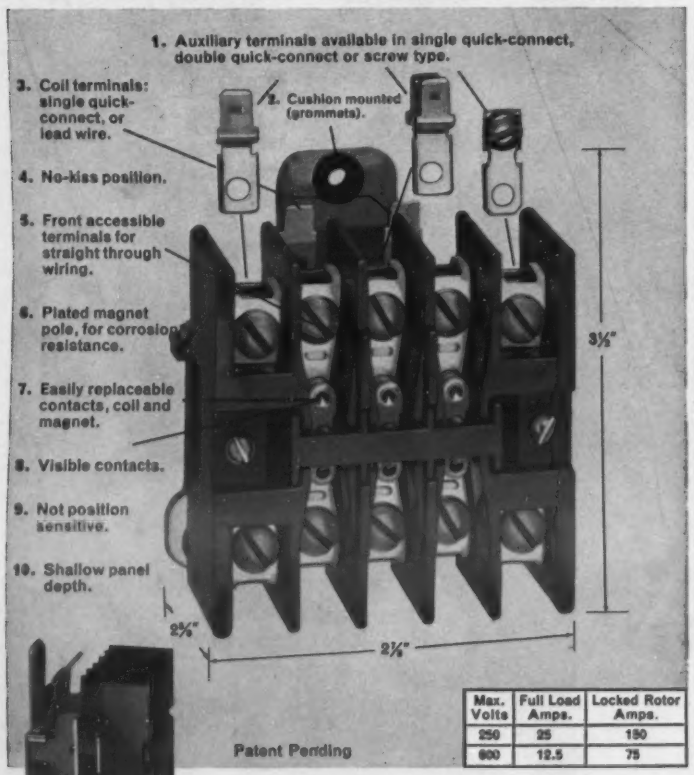
HIALEAH, Fla. — Manny Kern has been appointed vice president of Weathermatic Corp., exclusive Carrier distributor in south Florida, the firm announced.

Kern joined Weathermatic in April of this year as general sales manager. He is now preparing a sales promotion and advertising campaign for 1962, to be presented at Weathermatic's forthcoming annual dealer meeting.

NEW RBM
25 AMP — 2 AND 3 POLE
CONTACTOR
TYPE 85
DESIGNED FOR UL AND CSA LISTING

Simplifies panel circuitry — helps eliminate terminal boards — cuts wiring costs.

Here is the first air conditioning contactor designed so auxiliary terminals can be added to power wiring terminals. Also, extra dummy wiring terminals can be added when required. Such flexibility can help eliminate terminal boards, lower wiring costs, and provide more versatile and simplified panel circuitry. Auxiliary terminals can be #8 screw or ¼" single or double quick-connect. Dummy terminals are #10 screw with or without the auxiliary terminals. Consult your application engineer or write for Bulletin C16.


1. Auxiliary terminals available in single quick-connect, double quick-connect or screw type.
2. Cushion mounted (grommets).
3. Coil terminals: single quick-connect, or lead wire.
4. No-kiss position.
5. Front accessible terminals for straight through wiring.
6. Plated magnet pole, for corrosion resistance.
7. Easily replaceable contacts, coil and magnet.
8. Visible contacts.
9. Not position sensitive.
10. Shallow panel depth.
3½"
2¾"
2¼"
Patent Pending

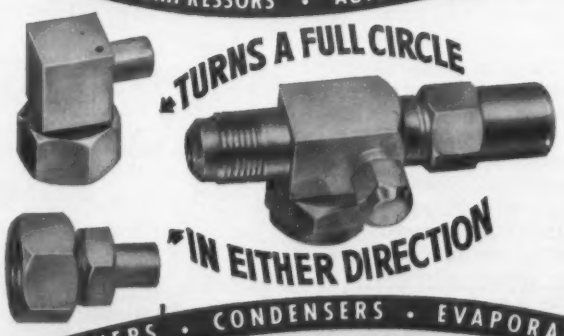
Max. Volts	Full Load Amps.	Locked Rotor Amps.
250	25	150
600	12.5	75

ONLY RBM HAS ENGINEERED A COMPLETE FAMILY OF AIR CONDITIONING CONTROLS

TYPE C-30, C-40, C-50 CONTACTORS Write for Bulletin 1070
TYPE 80 CONTROLLER Write for Bulletin C-11
TYPE 75 POWER RELAY Write for Bulletin 1030.
SERIES 129000 SHUNT TYPE RELAY—SPNO, SPNC OR NO-NC Write for Bulletin 1010-A.
GENERAL PURPOSE RELAY Write for Bulletin 1060
SERIES 128000 POTENTIAL STARTING RELAYS Write for Bulletin 1010-A
BIMETAL TIME DELAY RELAYS AND THERMOSTATIC DEVICES Write for Bulletin C-15
ENCLOSED BANTAM RELAY TYPES 83 & 84 Write for Bulletin 1080

"Controlling the Future"
RBM CONTROLS DIVISION
LOGANSPORT, INDIANA
Factories Located at North Manchester and Logansport, Indiana

Primore ROTALOCK Valves and Fittings for
HERMETIC COMPRESSORS • AUTOMOTIVE COMPRESSORS



SIZES

SWEAT	FLARE
¼	¼
⅜	⅜
½	½
⅝	⅝
¾	¾
⅞	
1⅛	
1⅜	

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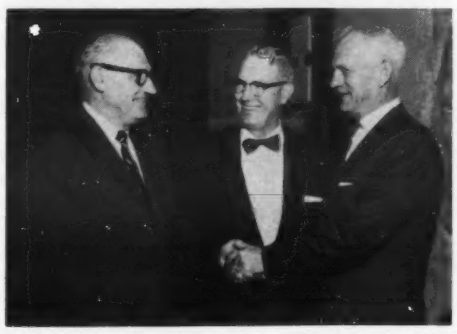
Fete Alexander at Luncheon, Barth Succeeds Him as JIPC Chairman



AT JIPC testimonial luncheon, new general chairman Fred Barth (l.), clasps hands with retiring chairman Tom Alexander (r.), as Walter McCarty, president of Refrigeration & Air Conditioning Contractors Association, looks on

WASHINGTON, D. C.—Tom C. Alexander, immediate past president of RACCA-National, was honored for his work as general chairman of the Joint Industry Program Committee at a luncheon held recently at the Statler hotel here.

The JIPC is an organization composed of representatives, usually the president and the executive directors of the following associations:

Mechanical Contractors Assn. of America; National Assn. of Plumbing Contractors; National Automatic Sprinkler & Fire Control Assn.; National Lead Burning Assn; Refrigeration & Air Conditioning Contractors Assn.; Pipe Fabrication Institute; Pipe Line Contractors Assn; the National Constructors Assn.; and the United Assn. of Journeyman & Apprentices of the Plumbing & Pipe Fitting Industry.

During Alexander's tenure as general chairman for 1960-61, the JIPC's efforts were directed to such matters as:

The improvement of technical training affecting apprenticeship and journeyman training under the Defense Education Act of 1958; contracting work on missile sites; work on new industry products and services; problems of temporary plumbing, heating, and cooling specifications; discussion on U. S. Supreme Court decisions on hiring halls; use and care of tools and equipment; and other matters.

Fred Barth of the Pipe Fabrication Institute succeeds Tom Alexander as general chairman of JIPC.

Other newly-elected officers include: Chet Brownell, NAPC, general vice chairman; Martin J. Ward, UA, treasurer; and three secretaries — William C. O'Neill, UA; Jerome Hendrickson, NAPC; and John McCann, MCA.

Congressional Scoreboard

One Contract Procedures Bill Dead, Another Lives In Committee for '62

WASHINGTON, D. C. — Opposition by government executive and administrative agencies has killed H.R. 2225, an anti-bid shopping bill introduced by Congressman Elford A. Cederberg of Michigan, according to Robert McMillen, research director for the United Assn.

Reporting this at a recent meeting of the Joint Industry Program Committee here, McMillen also predicted there will be no action on H.R. 5082 until Congress enacts an over-all tax relief measure. This bill is designed to stimulate home repair and remodeling.

H.R. 2225 was offered as an alternative to H.R. 723, the controversial federal construction contract procedures act introduced by Rep. Thomas J. Lane (D., Mass.), it was pointed out by the National Assn. of Plumbing Contractors in a recent newsletter.

The Cederberg bill would forbid bid-shopping absolutely, requiring the successful contractor to accept a subcontractor's bid as submitted. However, McMillen said, there will be no hearings on the bill and it has no chance of passage.

McMillen indicated that an opinion poll of government administrative agencies regarding H.R. 723 had not yet been completed. No hearings will be scheduled until next year, if at all, it was stated.

The subcommittee of the House Judiciary Committee considering the bill has received a considerable amount of correspondence opposing it.

McMillen said member organizations of JIPC opposed to the bill should write to Congressman Lane, chairman of Subcommittee No. 2 of the House Judiciary Committee, requesting they be informed when any hearings are scheduled on H.R. 723.

Introduced by Rep. Bob Casey (D., Texas), H.R. 5082 would allow homeowners to take an income tax deduction of $750 in any given year for home repair and remodeling done by a recognized and qualified contractor.

Owners of rental housing would be able to amortize any amount of building repair and remodeling work with tax deductions over a five-year period.

Reduce fan blade stock up to 75% with versatile

- ¼", 5/16", ⅜", ½", 5/8" and ¾" bore hubs
- for 3- or 4-blade fans
- 10" to 24" blades
- clockwise or counter
- precision engineered
- priced for profit

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"Here's why I standardized on H&M cooling towers

...they're the only towers with a 20-Year Guarantee on the wetted deck surface!

"In my town, most air conditioning and refrigeration buyers prefer cooling towers for their installations. But local water conditions are pretty hard on the fill. Fungus and algae grow fast and furious—so fast that the accumulation actually blocks air flow and cuts tower capacity!

"After trying several makes, I standardized on H&M Cooling Towers. *The wood fill is specially treated with creosote applied under pressure,* and water plants and animals can't live on that! That's why the Halstead & Mitchell towers carry a 20-Year Guarantee on the wetted deck against failure due to fungus attack or rotting."

If you want towers that will last, and need a minimum of care, you should find out about H&M towers. Call your local parts wholesaler or write for Bulletin EC-500 (Propeller Fan Towers, 3 to 150 tons) or Bulletin ECKB-601 (Centrifugal Fan Towers, 5 to 30 tons). Halstead & Mitchell Co., Dept. H102 Bessemer Building, Pittsburgh 22, Pa.

HM
Halstead & Mitchell
Cooling Towers • Air-Cooled Condensers • Air Handlers and Coils • Water-Cooled Condensers
Export Representatives: Sobal-Kielmann, Inc., 15 William St., New York 5, N. Y.

TECH CENTER

by *FRANK J. VERSAGI*

Internal Overload Protectors (1)

Burnouts of motor-compressors were discussed in the Sept. 4 issue. Most of the discussion dealt with procedures to be followed in cleaning up the refrigerant cycle after a burnout. The inevitable question arises: Why not prevent burnouts in the first place?

Obviously, part of the answer lies in installation and maintenance techniques. Conditions which lead to oil migration, to slugging of refrigerant, to overheating of the motor can be prevented in many instances by a little forethought. Beyond this, however, there should be means to prevent burnouts even if the units have been installed improperly or accidental overloading of the motor occurs.

And the continual development of overload protectors has been the result of a search for just protection. The ultimate development, so far, has been the *internal overload protector,* of one type or another, which cuts the motor off the line should either the temperature or amp draw become excessive.

Several approaches have been taken toward internal overload protection, and each of the manufacturers producing such devices has been asked to submit brief descriptions of its products and their underlying principles of operation. The next several Tech Centers will present these descriptions because of the importance of the development of internal overload protection to the air conditioning and refrigeration industry.

History of Motor Protection

Beginning the discussion with a brief history of motor protection is J. E. Kumler, vice president of research and engineering, Ranco, Inc.

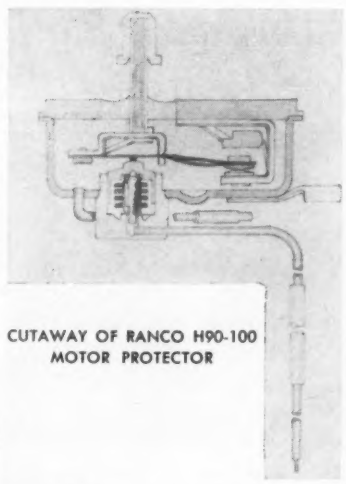
"The problem of controlling and restricting the temperature of motor windings is of vital importance to the motor manufacturer, the motor user and the general public," Kumler began his discussion for Tech Center.

"The motor manufacturer is anxious to have winding temperature limited to a safe value, so his products will have customer acceptance. The motor user is interested in winding temperature because it affects motor life and maintenance cost. The general public is not aware of any interest in the matter but is certainly affected in all cases when excessive temperature results in a breakdown of their appliances or equipment.

"In the early days of the industry, motors did not have adequate protection against overheating, because suitable protective devices were not available. Motor circuits were fused but the fuses had to be large enough to accommodate the motor starting current and were, therefore, too large to properly restrict the running current or protect the windings.

"The shortcomings of fuses led to the development of magnetic type relays provided with dash-pots, which retarded the operation of the relays to such a point that they could be set to operate close to the full load current of the motor and still have enough time delay to allow the motor to start," continued the Ranco V-P.

"These relays were incorporated into motor-starting switches and in most cases provided fairly adequate motor protection but they had one undesirable characteristic: their operation depended entirely on motor current, while the temperature of motor windings can



CUTAWAY OF RANCO H90-100 MOTOR PROTECTOR

be affected by several variables other than current, for instance, room ambient.

"Thermal type relays were the next development and are widely used today. These operate on temperature as well as being responsive to current.

"Probably the first use of built-in thermal overload protectors applied to small motors occurred in 1928 when a few applications were made on open type motors used on small hand tools. The first large scale commercial use of such protectors occurred in 1929 when they were used on hermetic units in refrigeration.

"By 1939, Underwriters' Laboratories had recognized the advantages and safety features of motors having built-in thermal overload protection. They coined the descriptive phrase "inherent-overheating protection" and adopted standards covering such devices.

"Until fairly recently, motor protectors were mounted only on the outside of the motor enclosure. Today, there are a number of motor protectors which are mounted in, on, or adjacent to the motor windings and sealed within the hermetic refrigeration system."

Kumler went on to describe Ranco's approach to inherent protection, exemplified by the company's Type H90 Thermal Motor Protector.

The device is a power element-actuated, hermetically sealed switch designed for installation in, and as a part of, the winding of hermetically sealed motors. "It will protect the motor against running overloads and also provide fast response for locked rotor protection," Ranco claims.

The sensing element, or bulb, becomes part of the motor winding and replaces the last one-half turn of the main or run winding before it joins the common lead wire. The current which normally passes through the run winding also passes in series through the bulb. The bulb thus actually becomes a part of what it wishes to sense; a portion of the motor winding. Its thermal relationship to the winding is the ultimate since it occupies the same space as the conductor.

The hermetic switch case assumes a common potential and becomes a connecting point for all other common leads, such as the common end of the phase winding and perhaps the common end of a parallel main pole or poles. The switch thus breaks the entire common side of the motor circuit.

Expanding liquid in the bulb opens the switch at the desired thermal cut-out point, approximately 240°F., regardless of the amount of current flow. At greater currents, particularly locked rotor current, the self heating of the bulb is sufficient to anticipate the fast temperature rise and open the circuit in ample time to prevent overheating, according to the company.

The electrical resistance of the bulb material is chosen to correspond approximately with the wire size of the winding it replaces. The rate of rise of the bulb temperature is kept slightly ahead of the surrounding winding during locked rotor. Since the amount of anticipation is relatively small, application becomes less critical.

"Thus a comparatively few models will cover a fairly wide range of motor sizes.

"Long and extended testing on the part of the motor manufacturer is not necessary to properly apply this type of device. The motor manufacturer has only to assure himself of adequate locked rotor anticipation since protection for all running-conditions will be taken care of by the thermal intimacy between the control bulb and the winding," Ranco suggests.

"This is particularly true for the more difficult motor protection problems in low temperature and heat pump applications.

"Protection is also assured against loss of charge or whenever overheating might occur under low load conditions. This device will provide protection against locked rotor at half voltage," Kumler concluded.

Figure 1 is Ranco's across-the-line model. Another model is designed for pilot duty application.

(To Be Continued)

Havens

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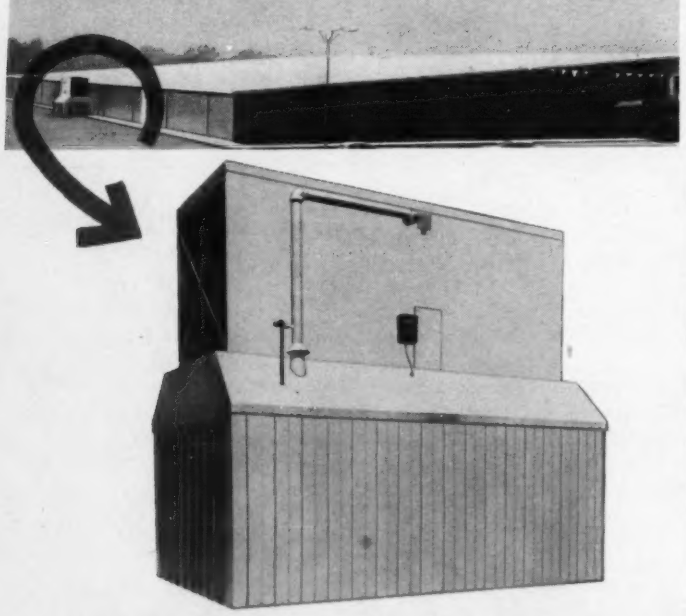

UNIQUE 3 PACKAGE, SIDE BUILDING INSTALLATION AT THE NEW HOME OWNERS MART IN KANSAS CITY

133,000 square feet under roof at the New Home Owners Mart in Kansas City, Missouri. This low lengthy roof has no towers or air conditioning units on it. Three 125-ton Havens' towers are installed beside the building. Each Havens' tower forms the roof of a steel structure enclosed with curtain wall which serves as an equipment room containing a 125-ton compressor and related equipment.

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'Cool Air Clinic'

Florida Firm Uses Entertainment, Educational Sales Pitch To Promote Whole-Home Air Conditioning to Senior Citizens

SUBSTANTIAL TURNOUT OF St. Petersburg "senior citizens" would have made the "clinic" a success even without the impressive number of actual sales contracts for residential air conditioning that resulted from attendance at the affair.

ST. PETERSBURG, Fla.—An unusual approach to the promotion of sales of whole-home air conditioning in the form of a "Cool Air Clinic" that combined entertainment with an educational sales pitch paid off handsomely here this past summer.

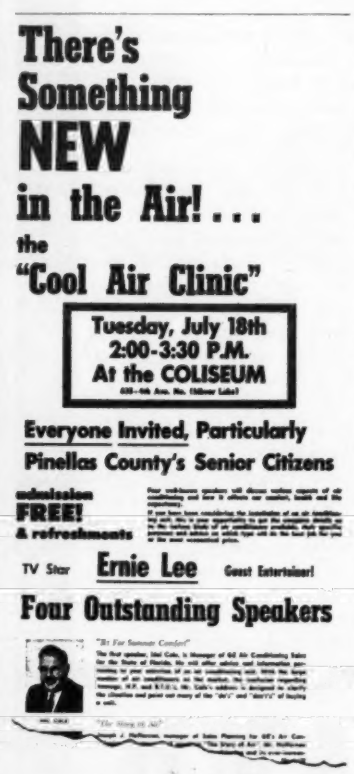
Reportedly the promotion resulted in 27 countracts being signed for the installation of air conditioning equipment, with one job of 23 tons paying for the entire promotion. The results are all the more remarkable when it is considered that the promotion was directed principally to Pinellas County's "senior citizens" (who make up the majority of the population) and people in this age group are not considered particularly good prospects for air conditioning.

The "Cool Air Clinic" was sponsored by J. C. Pressly & Co., which handles General Electric central air conditioning equipment in this area. It was held on a weekday afternoon in the Coliseum here. Playing a prominent part in putting the affair together was Mel Cole, manager of G-E air conditioning sales for the state of Florida.

Also cooperating in the "educational" part of the program were Burt Woodruff, of the residential division of Minneapolis-Honeywell, who spoke on "Living in a Self-Cleaning Home" depicting the benefits of living in a self-cleaning home; and T. I. Wetherington, air conditioning specialist for Florida Power Corp., whose subject "Live Better . . . Electrically in Year-Round Comfort" embraced the heat pump story.

Cole also participated in the program, offering advice and information pertaining to the selection of an air conditioning unit. Also participating was Joseph J. Heffernan, at that time manager of sales planning for the G-E central air conditioning department, who told "The Story of Air" a discussion of the importance of conditioned air to the health and comfort of people in present-day living.

Entertainment was furnished by Ernie Lee and his troupe, popular TV entertainers in this area.



ADVERTISING FOR 'COOL AIR' clinic emphasized both the nature of the affair, and the fact that free entertainment and refreshments would be provided.

"SELF-CLEANING HOME" story is told by Burt Woodruff of Minneapolis-Honeywell during a period devoted to demonstration of equipment. He demonstrated operation and control of M-H air filtering equipment.

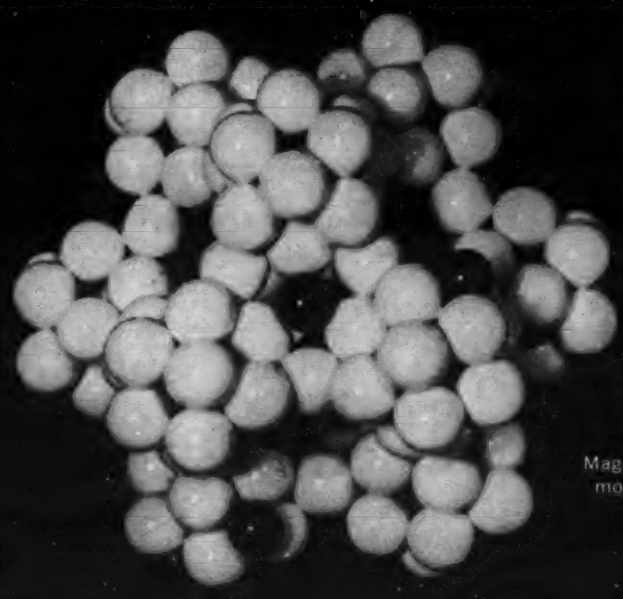
PRIMARY SPONSOR of the clinic was J. C. Pressly & Co., General Electric central air conditioning outlet in St. Petersburg, who enlisted cooperation of G-E factory headquarters officials and the electric utility. Here J. C. Pressly (left), Jim Pressly, and Tom Wetherington, air conditioning specialist for Florida Power Co., look over some of the equipment.

AVID INTEREST of "Cool Air Clinic" attendees in modern whole home air conditioning equipment is demonstrated in this informal photograph of group inspecting equipment.

TO ATTRACT ATTENDANCE a group of entertainers, locally popular through their TV appearances, were hired to put on a variety show.

Super-Dry Refrigerants with today's highest capacity desiccant

—LINDE MOLECULAR SIEVES



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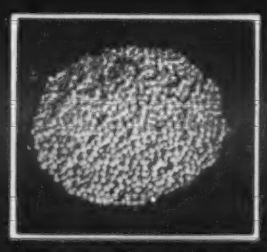

Molecular Sieves in bead form—widely used in refrigeration

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LINDE now has available **new hard bead** desiccants . . . with greater-than-ever particle strength for refrigeration systems . . . specifically designed to eliminate freeze-up and corrosion.

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FOR NEWS READERS AND ADVERTISERS

AIR CONDITIONING, HEATING & REFRIGERATION DIRECTORY will be a **REGULAR ISSUE** of the "News" starting this year!

For the first time since its inception in 1932, the Air Conditioning, Heating & Refrigeration Directory will be delivered to all Air Conditioning, Heating & Refrigeration News subscribers. Its cost will be included in regular subscription rates. As just one of the many News extra services to readers this year, the Directory will be published as the 52nd issue on December 25th.

No change in its handy, 6 x 9 book-size for table-top reference, the Directory will contain:

MANUFACTURERS SECTION – over 1,600 firms, including location, phone number, key personnel, products

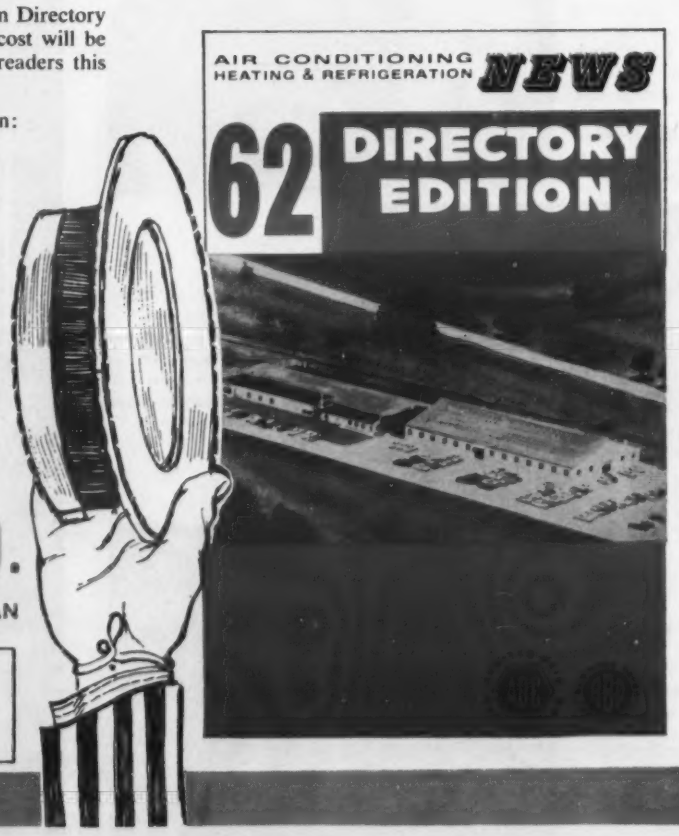
PRODUCT SECTION – over 4,000 products in 971 product categories, with over 8,500 company cross reference listings

TRADE NAME SECTION – over 2,200 trade names, with manufacturer cross reference

WHOLESALER SECTION – over 1,000 separate companies *Plus* **TRADE ASSOCIATON SECTION – EXPORTER SECTION –**

This new procedure will be a boon to advertisers, too. It automatically increases the guaranteed circulation from 15,000 to over 21,000, and gives advertisers an accurate ABC audit of distribution. As in the past, the Directory will also be distributed at the national ARI Exposition in February and through wholesalers. All this, at no increase in advertising rates, either for advertisers already signed up, or those still contemplating space in the Directory.

If you're a reader, look for your bonus shortly after December 25th. If you're an advertiser, collect your bonus before the final closing date – October 15th.



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How To Check Cap Tubes (1)

By Henry Ehrens, President,
Sealed Unit Parts Co., Inc., New York City

EDITOR'S NOTE: So much interest was aroused by the author's recent seven-part series on Capillary Tube Systems, which appeared in the NEWS from April 24 through June 5, that he was invited to contribute more thoughts on the subject. Ehrens has had many years of experience in the wholesale repair and rebuilding of hermetic units and systems as well as manufacturing replacement parts and components.

The title "service engineer" belongs to the man who has had more than five years experience in repairing and diagnosing refrigerating equipment. He is a "bug" on instruments and is constantly on the prowl for the latest in meters, gauges, and electronic thermometers. He is always reading the trade journals for the latest testing techniques and checkout methods.

He is made of 10% refrigeration theory, 10% electrical theory, 10% chemistry and physics, and 70% experience and applied common sense. Upon his shoulders rests the reputation of the manufacturer, the contractor whom he works for, and the sanity of the customer. Most important of all, he never stops learning. His rate on call-backs is about 10%.

A good mechanic or serviceman is one who has had less than five years' experience, knows how to use gauges and electrical instruments, and is always on the alert to learn more. His rate on call-backs is about 20%, he just lacks experience.

Classic 'Expert'

Now we come to the classic "expert." He has had more than 15 years experience and knows everything. He is an extreme egotist and hasn't used a gauge or meter for the past five years or more. He is a "bug" for snap diagnosis, and claims that no job has ever licked him yet, even if he had to change every part of the equipment, piece by piece.

He can tell temperature by wetting his finger and touching the evaporator, he can even tell the suction and discharge pressures by touching the various lines; as to the amount of current the unit is drawing, he just knows. His rate on call-backs is about 50%.

How does he get away with it? Well, he has had over 15 years experience in picking out the best answers for anyone who would venture to question him on the last call-back.

In about five more years he becomes an "artist." He has stopped touching lines and wetting his finger; now he just listens. He hears things. He has also developed a new refrigeration technology, like "synchronous vibrations of the stator coils," "flapper valve harmonics," and "modules of air currents that disturb the normal trajectory flow of Btu." This is the evolution of a service engineer who stopped using gauges and meters.

Why He 'Rides' Experts

The main reason I "ride" these experts is because they play "blindman's buff" instead of getting down to basic facts which only instruments can show. It's a guessing game that is costly to everyone but themselves.

Some time ago one of my "expert" customers called me on the phone complaining bitterly that the last sealed dome we repaired for him was no good, and that our workmanship was getting lousy, and that we weren't testing them properly before we sent them out, etc., etc. I let him blow off steam for about five minutes and then asked him what exactly was wrong with the unit. Here is the conversation from then on:

"The dome is just no good, that's what. It kicks off the overload."

"How high an overload is it drawing?"

"What do you mean?"

"What's its amperage?"

"I don't know, I haven't got my meter."

"You know that it could be a defective overload?"

"Yeah, but the dome gets hot as hell."

"What's the head pressure?"

"Normal."

"I mean pounds per square inch gauge."

"I haven't got my gauge with me."

"You know that there is a good possibility that you're overcharging, which would account for the overload."

"What are you trying to do, kid me? I've been in this game for over 20 years and I tell you that this dome is just no good; it don't sound right."

"Listen, just for the heck of it put on a head gauge, and if the pressure is normal, bring the dome back and I'll exchange it. Do me this one favor."

Costly 'Pride'

"OK. I'll do you a favor. It just beats me how you're trying to get out of this by making me go to the shop to get a gauge."

Would you believe it when I tell you that I never heard from him since about this job? I've seen him a number of times, but I never brought up that subject in order not to embarrass him. What I'm trying to bring out is that here you have a highly experienced man who is willing to go through the needless and wasteful trouble of removing a perfectly good dome all because of some kind of stupid pride that he doesn't have to rely on a gauge to tell him what the trouble is.

If only he would be intelligent enough to realize that when he uses meters, he is not lowering his dignity as a service engineer; that the more experience you acquire, the more you realize how utterly dependant you are upon instruments.

I bet that when he finally put on the head gauge he found that the cap tube was restricted.

Cap Tubes Critical In Many Ways

You know that in my last series of articles on cap tubes, I don't think that I stressed the point strong enough that all cap tube systems are very critical—critical as to charge, critical to compressor efficiency, and very critical to its original pressure drop (restriction).

In the days of low side floats and even today with our thermostatic expansion valves, all these types of systems are designed for peak loads. The compressor capacity, the motor, the evaporator and condenser are so designed that when the ambients reach 95°F the unit will still function without overloading itself. That's called "peak load operation."

The very same type of engineering goes into a cap tube system; it's designed for peak or full load operation. This is one of the most important factors that is overlooked today when a cap tube system is checked out.

Varying Ambient Temperatures Responsible For Many Service Calls

You know that if the ambient temperatures never fluctuated, the problems of service would be about 80% less. Unfortunately, ambients do vary, sometimes as much as 30°, so let's take a typical call on a 15 cu ft chest type bottle cooler. It's a wrap-around dry evaporator cap tube system, ¼ hp R-12.

Complaint: no refrigeration. No pressure in the system, our gauges show, so we apply some vapor pressure, locate and repair the leak, change the drier, and evacuate the system after connecting the ammeter.

As you proceed to charge the unit you notice the thermometer outside the cabinet reads 75°. When you think that the unit has enough R-12, here's what your instruments read: low side 7 lbs, high side 130 lbs, amps 4.5, and the evaporator is only ¾ frosted.

You can reason that the high head and the low back pressure were because you could have charged the unit too fast and loaded the condenser. The next step is to shut down the unit and let it balance, which you do. But you get the same condition when you start it up again.

Well, you just have to get the frost line to the top of the evaporator so you add some more gas. Now your back pressure is up to 15 lbs and the evaporator is fully frosted, but the head pressure is up to 170 lbs and the ammeter now reads 5 amps. The nameplate on the unit reads: Full load amperes—5. This means that at 75° room temperature you are already operating the unit at full load.

The fatal mistake would be to leave the job as is. Because if the ambient should go to 85°, the head pressure would climb to about 200 lbs and the amperage would rise to almost 7 amps. This is about a 40% overload. It's 10 to 1 that the unit will eventually burn out.

Here we have a perfect example of what happens behind the scene on a service call of this nature. A service engineer using his instruments would know that the unit has a restricted cap tube and would change it. The "expert" would never know the true condition of the unit and would leave the job "working perfect."

In either case everything would be swell until the first hot spell. The unit with the

(Continued on next page)

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Cap Tubes--

(Continued from preceding page)

changed cap tube would work at full load and everyone would be happy. The "perfect working" unit would burn out and everyone would be miserable, everyone except the "expert."

The 'Perfect Crime'

The ironical part of this little story is that the "expert" wouldn't even know that he was the direct cause of the unit's burning out; the stupid part of this story is that nobody would ever know. This is such a perfect crime, that even the killer himself doesn't know who committed the crime.

Ever hear the expression "You charge a cap tube system until frost appears 2 in. on the outlet of the evaporator"? It's a true statement but incomplete. Correctly stated: "You charge a cap tube system until frost appears 2 in. away from the evaporator at 70° room temperature."

The reasoning behind this is that all evaporators on cap tube systems have an accumulator or drier coil. The main function of this part is to compensate for the fluctuation of the amount of refrigerant that is in the evaporator. This difference varies indirectly with the room temperature.

In other words, when the room temperature is at its highest, the refrigerant in the evaporator is at its lowest, and vice-versa. When the ambient is high, the condenser pressure is high and therefore holds more refrigerant. This extra amount can come from only one source, the evaporator.

Since there isn't any receiver in a cap tube system, the accumulator stores the surplus in the cooler ambients, and gives it up at the higher temperatures. In this way the evaporator remains in a flooded condition at different room temperatures.

If you should charge a cap tube system until the frost appears a few inches away from the evaporator in a 85° ambient, which means that the accumulator is full up, you can bet your bottom dollar that when the room cools down to 70° you're going to get a call that the frost-back is "leaking water all over the floor."

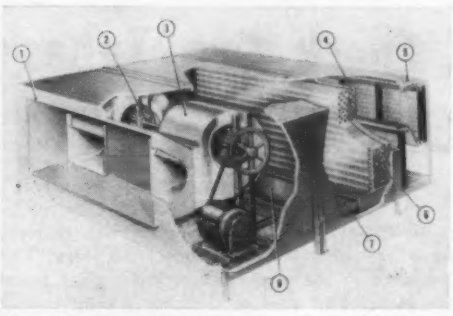
(To Be Continued)

Amana Names Risner President of Chicago Distributorship

AMANA, Iowa—Appointment of Joe Risner, 36, Hinsdale, Ill., as president of Amana Refrigeration of Chicago, Inc., was announced by Amana Refrigeration, Inc.

Risner joined Amana in 1958 as sales manager for the company's Chicago branch. Later in the same year, he was promoted to general manager, which position he held until the formation of the new corporation, incorporated in Illinois on Aug. 1, 1961.

As president, he will supervise the over-all activities of the new company which will distribute Amana products in the Chicagoland area.



NUMBERED FEATURES of new Lennox industrial and commercial evaporator-blower-filter units are (1) recessed blower outlet, (2) ball bearing flange mounted for full circle adjustment, (3) centrifugal blowers mounted on single shaft, (4) optional heat coil for hot water or steam, (5) filter section with access door at both ends, (6) special dual circuit coil for face and bypass or staging, (7) removable drain pan, and (8) space for a steam or hot water coil for reheat.

New Lennox Equipment--

(Continued from Page 1)

bypass handling of supply air without complex dampers, damper motors, and controls, the manufacturer said.

This is accomplished by dividing the coil into two separate coil circuits, a small and a large section, with a liquid line solenoid valve shutting off refrigerant to the smaller section on demand from a humidistat.

This routes all refrigerant to the large section only, resulting in lower evaporator coil temperatures and longer operating periods which, in turn, produce a greatly increased latent capacity.

The dual circuit coil also offers the advantages of a two-stage system. The large coil section and its separate condensing unit can operate off the first stage of a two-stage cooling thermostat while the smaller section and its separate condensing unit are controlled by the second stage of the thermostat.

Blower Location Can Vary

With evaporator coil and filter section remaining fixed in a horizontal arrangement, variations in blower location and direction of air flow provide for upflow, downflow or horizontal air delivery.

Furthermore, the blower section can be mounted horizontally at the end of the section containing the evaporator and filter or on top for vertical upflow or left or right hand horizontal air delivery.

The evaporator coil is constructed of durable ripple-edged aluminum fins that are flat-bonded to seamless copper tubes. It is easily removed from the cabinet and may be turned end for end permitting refrigeration line connection at either end of cabinet.

An optional steam or hot water heating coil is available, factory installed. Application of direct-fired duct heaters is also feasible.

Interior Plumbing Factory Installed

All interior plumbing is factory installed complete with distributors, manifolds, and expansion valves. The field plumbing connections are stubbed to the outside of the cabinet.

The 2-in. deep replaceable condensate pan is coated on both sides with corrosion-proof material and has a threaded drain connection.

The blower section consists of twin blowers on a single shaft and powered by whatever motor and drives are needed for the cfm and static requirements of a specific installation.

Air volumes of 4,000 to 15,000 cfm are available at static pressures up to 1½-in. wg. The shaft operates in flange mounted ball bearings permitting multi-position mounting of the blower section and positive vertical alignment of the bearings.

The filter section connects to either the blower or coil section air intake. Access doors are provided at both ends. The filter racks will accept 2-in. thick standard size throwaway type filters. One-in. spacers are provided so that 1-in. thick filters may be used if desired.

All three cabinets are completely weatherproof. Heavy gauge galvanized steel is finished in thermo-setting acrylic enamel. Blower and coil cabinets are lined with 1½-lb density Fiberglas insulation.

Roof Top Units

The new roof top units have an air volume range of 3,000 to 15,000 cfm.

The primary heat exchanger in this equipment is 16-gauge No. 430 stainless steel and meets Underwriters' standards when subjected to a 180°F air temperature rise over the heat exchanger. No internal baffles are employed.

The secondary heat transfer surface consists of 16-gauge aluminized steel tubing connected to stainless and aluminized headers, with both primary and secondary surfaces covered by a standard 10-year warranty.

As insurance against the possibility of induced draft fan failure, combustion aid and induced draft blowers are mounted on a common shaft whose bearings are cooled by a continuous flow of outdoor air.

Blower wheels are fabricated from stainless and aluminized steel and are welded to the shaft.

Single and dual fuel burners are available for No. 2 oil and natural gas and feature manual or automatic fuel changeover. Burner control includes on-off, high-low-off or full modulation.

The blower section, constructed and rated in accordance with the National Association of Fan Manufacturers, has forward curved blower wheels, statically and dynamically balanced as a complete unit.

In he heating-only version, operation of the unit is dictated by a simple room-mounted room thermostat.

In the heating and automatic ventilating control version, provision is made for a room-mounted heating thermostat,

Simply apply **SEARCH** to the suspicious area and watch the bubbles appear at the leakage point.

SEARCH is not a soap and water solution. It will not drip off upon application. **SEARCH** is a highly viscous formula which clings and wraps itself around the tubing or fitting, thus covering normally "hard to reach" areas.

The unbreakable squeeze type bottle with a self applicator makes application clean and easy.

SEARCH IS A SAFETY MUST FOR AUTOMOBILE AIR CONDITIONING, SINCE IT INCORPORATES NO OPEN FLAME.

FOR ADDITIONAL INFORMATION ASK YOUR WHOLESALER OR WRITE TO US, DEPT. N-101

WATSCo INC.

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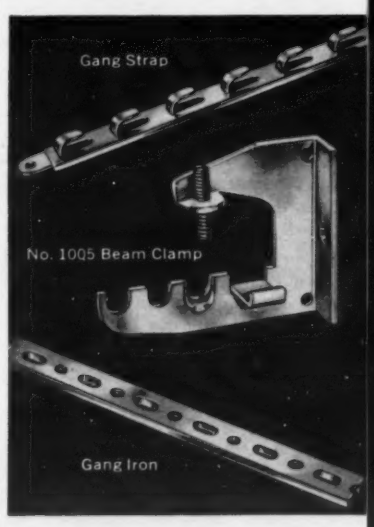
Cut installation time wit

MINERALLAC

Gang Strap an
Beam Clamp Tubing
Supports for the
Air Conditioning an
Refrigeration Industry



MINERALLAC GANG STRAP

Strap will support six ¼" O.D. tubes, or use in multiple for more than six ¼" tubes. Ca also be used in combination with No. 1 Minerallac Jiffy Clip for supporting five ¼ O.D. tubes and one ⅜" O.D. tube. Made of 2 Gauge U.S.S. cold rolled steel, one-half har zinc plated. Available in 6" and 30" lengths.

MINERALLAC NO. 1005 BEAM CLAMP

Clamp will support three ¼" O.D. tubes o two ¼" O.D. and one ⅜" O.D. tubes, i various positions on beams. Can also be use in combination with Minerallac No. 505 Gan Strap. Made of 15 Gauge U.S.S. cold rolle steel, one-half hard, zinc plated. Comes com plete with set screw.

MINERALLAC GANG IRO

Ideal for supporting single or multiple lines c tubing or conduit. Supports any sized tubin or conduit when used with properly-size Minerallac Jiffy Clips. Made of ⅛" x 1⅛" col rolled steel, Parkerized for added protectio against rust and corrosion. Available in 5 foo and 6 foot lengths.

Order from Your Electrical Wholesaler
LITERATURE OR SAMPLE ON REQUEST

MINERALLAC Electric COMPAN

ESTABLISHED 1884

25 N. PEORIA STREET • CHICAGO 7, ILLINOI

modulating air damper motor, room-mounted minimum damper positioner, and a mixed-air temperature controller.

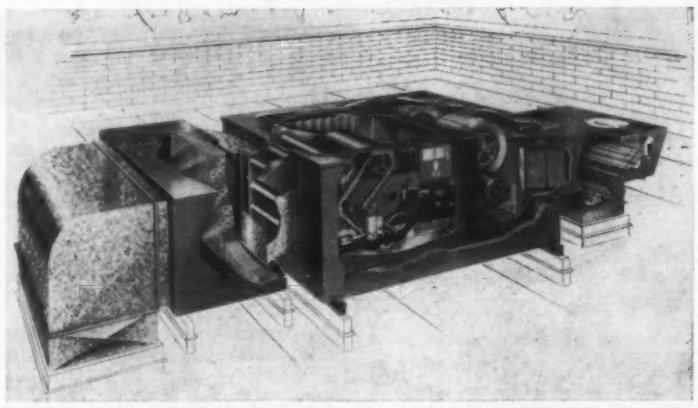
The minimum damper positioner is mounted near the thermostat and is adjustable to give a choice of minimum outside air damper position as dictated by local codes, ventilating, or occupancy requirements.

It will not allow the mixed air temperature controller to close the outside air damper less than the predetermined vent position.

Under normal operating conditions, the mixed air temperature controller modulates the positioning of the recirculated and outside air dampers so a constant mixed air temperature is maintained.

The mixed air temperature controller is factory set for 65° mixed air temperature, with adjustments available from 40° to 80°.

The heating, automatic ventilating and cooling version calls for a room-mounted heating-cooling thermostat, mixed air damper motor, room-mounted minimum damper positioner, mixed air temperature controller and an outside air temperature controller.



NEW LENNOX roof top units are available for heating only, heating and ventilating, and heating, cooling, and ventilating.

The room thermostat calls for heating and cooling in the conventional manner. The ventilating cycle of this system operates like the "heating-automatic ventilating version" except an outside air temperature controller is used.

It returns the dampers to the minimum vent position when the outside air is too warm to provide any cooling. It is factory set at 70° and has an adjustable range from 20° to 90°. Damper applications may also be specified for manual operation if desired.

The new units are wired in accordance with the National Electrical Code, the system consisting essentially of factory-wired control panel box, fuse blocks, magnetic starters, master safety control, draft interlock, combination fan and limit control with manual selector switch for summer blower operation, burner switch, fuel selector switch as required, and flame detector, all mounted and wired.

A thermostat is shipped as standard equipped. Control circuit is designed for 115v 60 cycles.

The controls are mounted on the burner end of the heating unit and comply with Factory Mutual requirements. Factory Insurance Association construction is available.

The external cabinet, which is 65 in. high in the largest unit, is of 20-gauge bonderized-galvanized steel with a finish coating of thermo-setting acrylic enamel, completely resistant to normal corrosive elements. Insides of cabinets are insulated with 1½-lb density 1-in. fiberglass.

Filter boxes, outside air louvers, and direct expansion evaporator units furnishing up to 40 tons of cooling are available.

Like Lennox' earlier 17-ton and 25-ton air cooled condensing units, the new 11-ton model employs a large condenser air volume and special coil circuitry to gain maximum capacity.

The coil circuiting provides a sub-cooling benefit which delivers liquid refrigerant to the evaporator up to 20° cooler than the condensing temperature. (For further details see earlier story mentioned above.)

Wagner Div. Names Preston F. Ryan

ST. LOUIS—The Electrical Apparatus Div. of Wagner Electric Corp. has announced the appointment of Preston F. Ryan as manager of its St. Louis sales office and that of Herbert P. Pillisch as manager of its Indinapolis office.

Each will supervise sales of electric motors, transformers, and industrial brake products in his area. Both were formerly sales engineers in the St. Louis territory.

Brown Products Names Outlet

UNION, N. J.—A. Brown Products Corp. here has announced the appointment of Albert A. Swanson Co., Boston, to sell and distribute its "Bayce-Heet" baseboard radiation in Massachusetts, New Hampshire, Maine, and Rhode Island.

A. L. Topp

G. D. Becker

Controls of America--

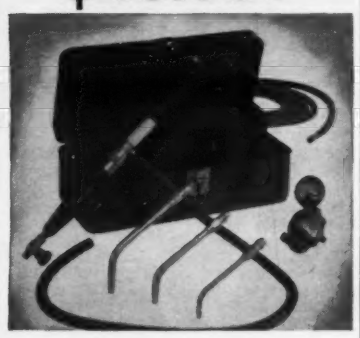
(Continued from Page 1, Col. 3)

also is chairman of the board of directors, Lake City, Inc., a Controls Co. subsidiary.

Becker previously was associated with Soreng Products Corp. which merged with A-P Controls Corp. to form Controls Co. of America in 1956.

Topp, associated with A-P Controls Co. for more than 20 years, recently was named assistant general manager of the Heating & Air Conditioning Div. Previously, he had held the positions of director of sales and director of engineering.

BUILD YOUR BUSINESS ON $43.00!



Install • Service • Find and Fix Leaks with the

PREST-O-LITE

Refrigeration and Air Conditioning Outfit

This single compact kit costs only $43, yet contains every essential piece of equipment for your work. You get three interchangeable open-flame stems to provide the right air-acetylene flame for soldering, brazing, or heating. Fit the sensitive leak detector stem to the same torch handle, and you can pinpoint the tiniest halide gas leaks—as little as 100 parts in 1,000,000 parts of air. Compare that with soapy water!

In one sturdy carrying case, the kit also includes an adjustable gas pressure regulator, torch handle, and hose—everything for the installation, repair, and everyday maintenance of all types of refrigeration and air conditioning systems. See your local *Prest-O-Lite* dealer. Or write Linde Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y.

LINDE COMPANY — UNION CARBIDE

"Linde," "Prest-O-Lite," and "Union Carbide" are registered trade marks of Union Carbide Corporation.

Increasing Lighting Loads--

(Continued from Page 1, Col. 5)

technical advancements have pushed energy conversion up within 65-70 lumens for each watt input," M. L. Quinn and R. D. Bradley of Day-Brite Lighting Co., St. Louis, told the National Technical Conference of the society.

"To produce the illumination levels recommended for such buildings within generally accepted standards of visual comfort, this load becomes a primary factor of thermal comfort and economic considerations," they stated.

"Uncontrolled distribution of the lighting heat load requires cooling in some parts of the building at the same time heating may be needed in other parts, the two men said in their paper, "Convective Transfer of Lighting Heat Loads."

This is perhaps one of the greatest paradoxes in building today, it was stated.

While energy is used to cool the heat generated within interior building zones, at the same time, additional energy must be generated to comfortably heat perimeter zones. Optimum operating efficiency could be realized if load patterns could be balanced by more sophisticated systems designing, they declared.

Fifty footcandles of light (a footcandle is a basic unit of measurement) will account for 25-30% of the total air conditioning load in the average office building. But as footcandles increase from 50 to 200, refrigeration plant tonnage and air handling systems must also increase in capacity.

The cooling load problem will "continue to mount unless a method can be found whereby the amount of light energy may be increased and the amount of heat energy reduced," they said.

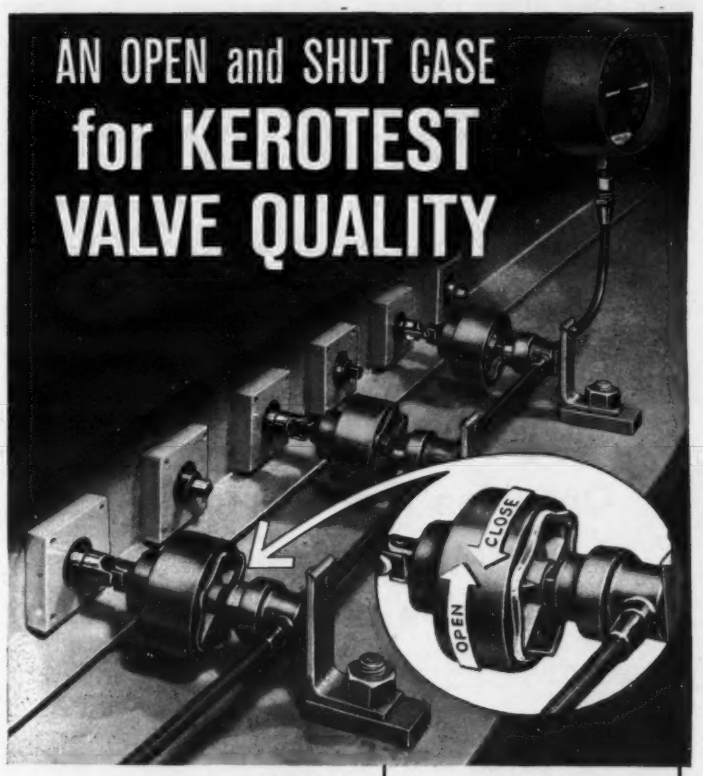
"As lighting loads increase, it becomes necessary to increase temperature differentials of air supply and/or increase the number of air changes per hour into ranges difficult to handle within accepted comfort standards."

Henry M. Haase Becomes Perkins Battery Chairman

YORK, Pa.—Perkins Battery Co. of York and New Oxford, Pa., is currently undergoing a reorganization following the recent purchase of operating control by Henry M. Haase & Associates.

Haase, former vice president of Borg-Warner Corp. and president of its York Div., became board chairman of the battery manufacturing firm on Sept. 6.

AN OPEN and SHUT CASE for KEROTEST VALVE QUALITY



TESTED and PROVED CONSTRUCTION

Kerotest engineers uncover vital performance data by opening and closing these valves a specific number of cycles per minute under controlled torque and pressure. Seating surfaces, materials and design features are checked periodically throughout the grueling test. Cycling stops and a final performance analysis is made only after one of the valve parts is destroyed on this Kerotest designed endurance testing device.

The trouble-free dependability and long life built into all Kerotest valves, fittings and accessories stem from more than a half dozen exacting quality control procedures. Kerotest valve performance under extreme operating conditions has been proven throughout the world for more than fifty years.

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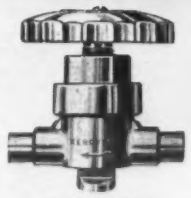


KEROTEST R224
DIAPHRAGM PACKLESS-LINE VALVE

The high quality brass valve for all types of refrigeration and air-conditioning systems. Especially built for high vacuum service, liquefied petroleum gases, gasoline, instrument control panels, oxygen (degreased), compressed air, water, nitrogen and refrigeration boards.

KEROTEST QUALITY CONTROLLED FEATURES

- Generous areas allow ample flow
- Durable, forged brass body and bonnet
- Beryllium copper and stainless steel diaphragms
- Nylon seat
- Positive back seating

Sizes ¼" through ⅝"—flare and ODS
Maximum working pressure 750 psig

KEROTEST

From the Files of the News

25 years ago . . . 10 years ago . . .

Annual meeting of the Refrigeration Supplies and Parts Manufacturers Association has been scheduled for Nov. 10 in Memphis, Tenn. At a recent meeting directors of the group discussed possible standard discount sheets.

The NEWS predicts a building boom in residential housing, based on (1) rent increases, (2) apartment shortages and (3) housing shortages and notes that "to the refrigeration and air conditioning industry, of course, this state of affairs is highly significant." . . . "How to Figure a Specified Air Conditioning Job" is one of the talks chosen for the November Refrigeration Service Engineers Society.

"Air conditioning is one of the young industries which, by making proper use of engineering laboratories, has it in its power to create so much work that our problem would be a shortage of labor rather than a shortage of jobs," Charles Kettering told the **Saturday Evening Post** recently . . . . Utilities Engineering Institute has introduced the "Psychro-Calculator" which determines psychrometric values and properties of air and water vapor mixtures.

Mechanical refrigeration was credited by a recent survey with most effectively preserving sera, toxins, anti-toxins, vaccines, antigens, pathological specimens, pharmaceutical preparations and organic products.

After installing Westinghouse air conditioning equipment, a Sioux City food store reported a 30% increase in its spring sales . . . . A reader asked what company had an air conditioning unit especially designed to relieve hay fever sufferers.

National Production Authority officials were told that their proposal to standardize and simplify commercial air conditioning and refrigeration products was "not needed," according to the industry this proposal would affect . . . . A Lebanon, Ohio motel provides its customers with window-type air conditioning units, indicative of the trend toward "plush accomodations" in motels.

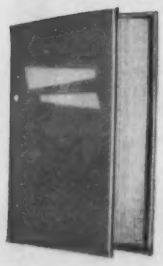
Two South Carolina cotton mills have installed complete air conditioning systems, each mill having seven large central type air conditioning systems for supply the manufacturing areas. . . . Answer to a reader's question, "Should infiltration load be considered when estimating heat loss or gain in a building?" was "if ventilation requirement is 10% greater than natural infiltration, ignore it."

Dirty air filters reduce the efficiency of air conditioning or heating systems and may cause erratic performance, White-Rogers Electric reported. . . . "Moisture—and 4 effective methods for the field man to use in combating it" in refrigeration systems was an informative article by F. Y. Carter of Detroit Controls. . . . RCA announced that it will market three window-type air conditioner units in '52, to be priced competitively and each to carry a 5-year warranty.

A "preview" of some of the 200-plus exhibits planned for the Seventh All-Industry Refrigeration and Air Conditioning Exposition was offered to aid readers in "spotting" displays in which they might find particular interest. . . . St. Paul's American Red Cross Blood Donation Center has been equipped with a special air conditioning system to provide the most favorable room temperature at each state of the blood donation process; the system utilizes three zones of reheat to provide gradual temperature drops from donor's street entry to his departure so as to eliminate "blackout."

Here is quick, clear reference on

Operating and maintaining refrigeration and air conditioning plants efficiently



This authoritative guide presents working information you can use in convenient question-and-answer form on maintaining and operating refrigeration and air conditioning plants at peak efficiency. It gives fundamentals, methods, and data to help building, marine, and industrial personnel in their daily work and when preparing for city, state, or Federal refrigeration license examinations and civil-service positions. A special section provides a complete listing of license requirements for operators in the United States and Canada.

Every important phase of the field is covered—from basic types of refrigeration systems, refrigerants, and compressors, through sizing piping for a system, methods of defrosting, and figuring heat loads, to troubleshooting and details of safety devices. Emphasis is on practical information that can be applied in all areas of the field . . . including how to operate a large industrial plant for top performance.

STANDARD REFRIGERATION AND AIR CONDITIONING QUESTIONS AND ANSWERS

By STEVE ELONKA
Management and Maintenance Editor, Power
and QUAID MINICH
York Corporation
245 pages, 5⅜ x 8, illustrated, $6.95

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Please send me ..... copies of "Standard Refrigeration and Air Conditioning Questions and Answers" at $6.95 each.

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John M. Dumser Joins Bridgeport Brass

BRIDGEPORT, Conn. — John M. Dumser, veteran metals executive, has joined the Bridgeport Brass Co. division of National Distillers & Chemical Corp. as assistant to Austin R. Zender, president.

Dumser will handle special assignments for Zender and Richard L. Allen, vice president, marketing.

Dumser began his career in the metals industry with Chase Brass & Copper Co. in 1927 where he remained until 1951. Then he joined the Wolverine Tube Div. of Calumet & Hecla, Inc., where for the past nine years he was director of marketing.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

25 YEARS' experience in the field and management of 60 man field operation. Entered the industry after graduation from Chicago Technical College, as shop mechanic, then to service engineer, supervisor, service manager, and general manager. 22 years with same firm. At present am operating own contracting firm on a profitable basis. Desire the opportunity to apply my knowledge to larger operation. C. S. (Charlie) MAYNARD, 1920 W. Fargo St., Chicago, Illinois.

ARE YOU looking for, — a seasoned, mature and experienced sales manager, sales engineer or manager of distribution? Product manager? A man with an industry wide reputation for original equipment design, installation design and application, merchandising know-how among dealers, distributing wholesalers and wide contacts among consulting engineers? Experienced in merchandising dealer training programs, wholesale distribution development residential split systems, heat pumps, warm air heat and packaged as well as field assembled equipment through 150 tons reciprocating. If you are looking, will consider either direct factory connection or a solid distributor and mechanical engineering organization with nationally recognized lines, used to big ticket sales. Excellent references available. Location immaterial. Available at once. Reply immediately to BOX A6875, Air Conditioning, Heating & Refrigeration News.

MECHANICAL ENGINEER with top notch education and 15 years' experience in refrigeration, looking for job as chief engineer for small company. Familiar with all phases of the refrigeration and air conditioning industry. Able to conduct all engineering functions from initial design to final testing. Prefer East Coast location. BOX A6885, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

LEADING SMALL manufacturer of top quality window units and related specialties wants capable product sales manager experienced in selling "professional" air conditioning trade through established and new manufacturers' representatives. Salary and bonus. Contact: H. W. Field, REMINGTON AIR CONDITIONING, Auburn, New York.

ADDITIONAL SERVICEMEN needed, commercial air conditioning and refrigeration service and installations, experienced, sober. Good salary. Steady employment. Hospitalization benefits. Give references, present salary, and experience. Our firm in business over 30 years. AARON TORCH & SONS, INC., 452 First Street, Macon, Georgia, SHerwood 6-5666.

SALES ENGINEER, technical graduate or equivalent with refrigeration and sales experience. Age 23 to 36. Interesting work calling on contractors, wholesalers and air conditioning and refrigeration manufacturers in established territories for a nationally known control manufacturer. Starting salary based on experience. Replies should contain complete resume of education and experience. All replies will be kept confidential. BOX A6829, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION ENGINEERS, JRS. Leading commercial refrigerator manufacturer located 30 miles south of Albany has outstanding opportunities for junior engineers experienced testing out, drawing conclusions and making recommendations. Some design and development background desired. Salary open, progressive management, excellent benefit program. Write fully and in confidence stating experience and salary required to: BOX A6877, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION SUPPLY salesman to work in Santa Clara Valley and vicinity with well established wholesaler in San Jose, California. Finest product lines. Only men with proven sales record and experience need apply. Salary, commission, expenses and fringe benefits. Give resume which will be held in strict confidence. Splendid opportunity with expanding organization. Reply to BOX A6883, Air Conditioning, Heating & Refrigeration News.

BIG MONEY opportunity exists for experienced salesmen on packaged and applied equipment lines of old established air conditioning and refrigeration equipment manufacturer. Prime territories available to qualified manufacturers' representatives. For confidential interview arrangements send resume to BOX A6884, Air Conditioning, Heating & Refrigeration News.

SALES ENGINEER, registered, under forty—needed by young, well established Chrysler Airtemp Ohio distributor. Must be well experienced in air conditioning and heating fields. No overnight travel. Earnings unlimited. All replies will be kept confidential. BOX A6886, Air Conditioning, Heating & Refrigeration News.

ENGINEER—FAN coil units. Leading Milwaukee-based company with full line of heating and air conditioning products seeks a young engineer with 2-5 years' experience in the fan coil unit field. Will have charge of expanding fan coil design and development activity. Good salary, full fringe benefit program, desirable location with opportunity for continuing education. Write BOX A6887, Air Conditioning, Heating & Refrigeration News.

SALES ENGINEER—Nationally known Midwest manufacturer has position available for graduate engineer, or equivalent, with refrigeration and sales experience to call on original equipment manufacturers. Starting salary based on experience. Replies should contain a complete resume of background and experience, BOX A6888, Air Conditioning, Heating & Refrigeration News.

ESTABLISHED FLORIDA West Coast air conditioning, heating company handling central systems only, wants experienced serviceman to organize and manage new room air conditioner department taking full charge of operations. Attractive proposition on small investment and profit sharing plan. Send photo and resume to BOX A6889, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

COMPRESSORS AND parts, new or used and repairable; Brunner, General Electric, Copelametic, Mills, etc. Give full details as to model number, horsepower, quantities, etc. Write UNITED REFRIGERATION CORPORATION, 514, W. 12th St., Los Angeles 15, California.

EQUIPMENT FOR SALE

MAKE EXTRA Winter profits: Display and sell a top line of room air conditioner Winter covers. Indoor and outdoor types available for immediate delivery from stock. Send for free alphabetical directory and price sheet. The price is low—the markup high—act now. JIFFY COVERS CORP., 614 Third Avenue, New York 16, New York.

ATTIC INSTALLATION kits for 2 and 3 ton air conditioning units consisting of aluminum fiberglass duct work, ceiling outlets and return air grilles. Special closeout prices. STANDARD AIR SERVICE CO., 1225 S. Wabash, Chicago, Illinois, HA 7-4567.

ATTENTION REFRIGERATION Servicemen. Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

GOOD REBUILT condensing units or compressors for all applications; also compressor and valve plate exchanges and parts sales. For quotation, give information on horse-power, voltage, phase, temperature and other data. Send for catalog on compressor exchanges. UNITED REFRIGERATION CORPORATION, 514 W. 12th Street, Los Angeles 15, California.

BUSINESS OPPORTUNITIES

SALES WANTED—Distributors, dealers and representatives. Silencers for room air conditioners. Reduces noises from room air conditioners as much a 50 to 75 percent and installs easily to grille. Most owners of room air conditioners are prospects. Your customers and friends will appreciate selling them this attractive product. Sells on sight at $27.50 each. For costs and information in your area regarding selling "The Soft Aire Silencer" write: AIRE SILENCER COMPANY, P. O. Box 78193, Los Angeles 16, Calif.

MISCELLANEOUS

"CRAMMING" for an operating engineer's license You'll find help, as many thousands have done, in S. L. Potts' "Refrigeration Engineer's Manual." Price only $3. See your wholesaler or order from BUSINESS NEWS PUBLISHING CO., Dept. B, 450 W. Fort, Detroit 26, Mich.

PATENTS

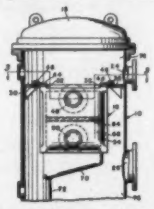
Week of May 30 (continued)

2,986,375. BLADED WHEELS FOR COMPRESSORS, TURBINES AND THE LIKE. Edward A. Stalker, Bay City, Mich., assignor to The Stalker Corp.

1. In combination in an axial flow wheel for compressors, turbines and the like having an axis of rotation, a blade disk having a plurality of blades peripherally spaced thereabuot and extending radially outward thereof each said blade having a root section connected to said disk by a neck, said blades, said necks and said disk being formed integrally from a single piece of sheet metal, said necks being twisted to position said root sections of each said blade at a substantial angle with respect to said disk, each said neck tending to untwist during said rotation. . . .

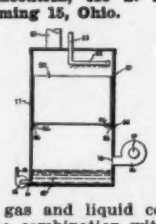
2,986,377. CONDENSER. Julius Naab, Easton, Pa., assignor to Ingersoll-Rand Co., New York, N. Y., a corporation of New Jersey.

1. A condenser comprising, a casing, a pair of flanges mounted transversely and diametrically opposite each other in the casing, a cooling unit having a fluid tight housing disposed in said casing and secured at one end portion of said flanges, said unit including means cooperating with the flanges to partition the interior of the



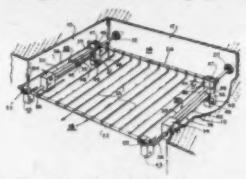
casing to provide an inlet chamber on one side of said partition and a discharge chamber on the opposite side of said partition, an inlet through the casing opening into said inlet chamber for the supply of fluid to be condensed, an outlet through the casing communicated with said discharge chamber for the escape of such fluid....

2,986,379. HEAT EXCHANGER. Robert E. Kramig, Jr., deceased, late of Wyoming, Ohio,, by Anna Louise Kramig, executrix, 615 S. Springfield Pike, Wyoming 15, Ohio.



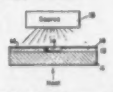
1. In a gas and liquid contact apparatus, the combination with the elements of such an apparatus of a contact core and means for passing a gas and liquid through said core in intimate contact with one another, said core comprising a plurality of composite sheets adhered together side by side, each of said composite sheets comprising two asbestos sheets, one of said asbestos sheets being corrugated, the other being substantially planar, each of said sheets being impregnated with a phenolic resin heated and cured in the sheet to an advanced stage of thermo setting.

2,986,440. REFRIGERATOR SHELF. Anthony J. Swaneck, Jr., Columbus, Ohio, assignor to Westinghouse Electric Corp., East Pittsburgh, Pa.



1. In a cabinet, structure supported within said cabinet for horizontal movement, and a shelf removably supported on said structure; said structure including a plurality of front support members for said shelf projecting upwardly in a first position and movable to a downwardly projecting second position, said front support members each being provided with slot means, and a rear support member provided with upper and lower means for alternatively supporting the rear of said shelf at respective upper and lower positions. . . .

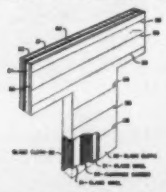
2,986,481. METHOD OF MAKING SEMICONDUCTOR DEVICES. Richard A. Gudmundsen, Rolling Hills, Calif., assignor to Hughes Aircraft Co., Culver City, Calif.



1. The method of producing a low resistivity region within a semiconductor body comprising the steps of: preparing an alloy of boron and at least one metal having a relatively high numerical segragation coefficient with boron, forming at least a portion of said alloy to define a wafer having an opening therethrough, placing said wafer of said alloy upon one surface of said semiconductor body, heating the combination to at least the eutectic temperature of a composition composed of the semiconductor body and said alloy. . . .

2,986,487. METHODS FOR MAKING EVAPORATOR PLATES. Paul C. Miller, Jr., Detroit, Mich., assignor to Fibercraft Products, Inc., Detroit, Mich.

1. The method of forming a flexible laminated fibrous body comprising impregnating fiber glass bats with adhesive, assembling said bats upon opposite sides of a porous flexible stiffening layer, assembling outer layers of woven glass cloth upon each outer surface of said fiber glass bats, compressing the several layers into a compacted laminate to adhesively secure the laminated assembly in compacted

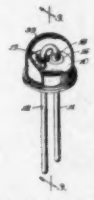


form, mechanically further securing said assembly with stitches of glass fiber thread applied through the adhesively secured compressed laminated body from surface to surface, and then removing the adhesive from said mechanically secured body.

2,986,525. REFRIGERANT ABSORBENT COMPOSITION AND METHOD OF PRODUCING SAME. Hugh S. Huges, 758 Pahs St., York Pa.

1. A composition for use in the generator of absorption type refrigeration equipment comprising a fused and granulated mixture of anhydrous salts containing from about 20 to 90% of a salt selected from the group consisting of the halides of the alkaline earth metals and from about 10 to 80% of a salt selected from the group consisting of the nitrates and chlorides of lithium and ammonia.

2,986,678. SEMICONDUCTOR DEVICE. Raymond J. Andres, Scottsdale, and Charles G. Thornton, Phoenix, Ariz., assignors to Motorola, Inc., Chicago, Ill.

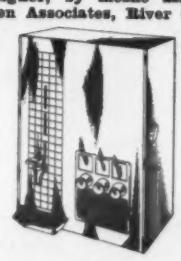


1. A diode, including in combination, a silicon die unit having two opposite sides and containing a PN rectifying junction therein, a metallic layer on each of said sides, a conductive lead having a hooked end positioned adjacent one of said metallic layers, a body of solder positioned between said one metallic layer and said hooked end of said lead, with said lead and said solder and said one metallic layer establishing ohmic contact with one side of said die unit, base means of conductive material with said hooked lead rigidly supported therein, said base means in heat exchange relation with said silicon die unit. . . .

DESIGNS

190,414. COMBINATION HOT AND COLD FOOD TRANSPORTATION AND SERVING CART. Delmar D. Rhoads, 3230 S. Calhoun St., Port Wayne, Ind.

190,441. BEVERAGE VENDING MACHINE. Hubert M. Giepen, Chicago, Ill., assignor, by mesne assignments, to Giepen Associates, River Grove, Ill.

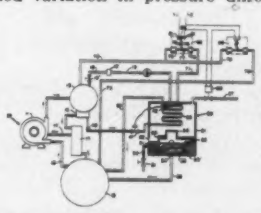


190,453. REFRIGERATOR CABINET OR SIMILAR ARTICLE. Robert E. Muns and Lawrence R. Collins, Jefferson County, Ky., assignors to General Electric Co., a corporation of New York.

Week of June 6

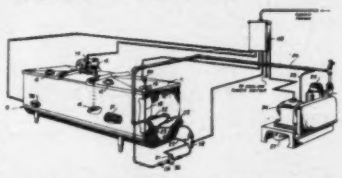
2,986,894, PURGE RECOVERY ARRANGEMENT FOR REFRIGERATION SYSTEMS. James W. Endress, Syracuse, and Terry M. Townsend, East Syracuse, N. Y., assignors to Carrier Corp., Syracuse, N. Y.

6. A method of purging a refrigeration system in which the steps consist in collecting non-condensable gases in a portion of the system, and, in response to predetermined variation in difference in pressure between pressure in the condenser of the refrigeration system and pressure in the collecting portion of the system and a predetermined variation in pressure difference



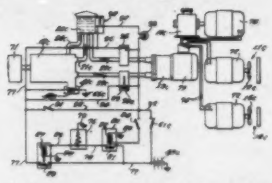
between pressure in the condenser and pressure in the evaporator of the refrigeration system, purging the non-condensable gases from the system.

2,986,895. APPARATUS FOR COOLING AND AGITATING LIQUIDS TO PREVENT STRATIFICATION. Paul R. Moline, Sr., Fort Worth, Texas, assignor to General Industrial Supply Corp., Fort Worth, Texas.



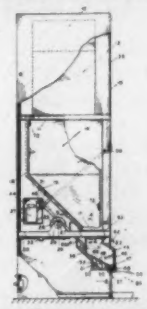
2. An apparatus for storing a liquid subject to stratification comprising: a tank for holding liquid; cooling means for lowering the temperature of the liquid in the tank; an agitator in the tank for agitating the liquid, control means for operating the cooling means whenever the temperature of the liquid rises above a predetermined value and for operating the agitator means whenever the cooling means is operating to prevent freezing of the liquid; and automatic means for operating the agitating means at predetermined intervals for predetermined periods of time independently of said cooling means to prevent stratification of the liquid.

2,986,896. DRIVE FOR REFRIGERATION SYSTEMS OR THE LIKE. Melvin M. Hann, Rockford, Ill., assignor to Sunstrand Corp.



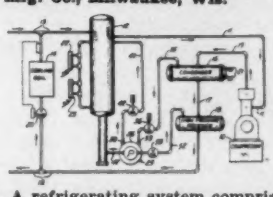
9. A drive for refrigeration systems of tractor-trailer units or the like, comprising: a hydraulic circuit including a hydraulic motor for supplying power to drive components of the refrigeration system, a hydraulic pump for supplying fluid under pressure to drive the hydraulic motor, a reservoir and piping for supplying fluid to the pump intake, a conduit connecting the high pressure pump discharge and the motor inlet, and a return conduit connecting the motor outlet and the reservoir; and an electric circuit including a solenoid for disabling the pump, an electric power source, and electric wiring connecting the power source and the pump solenoid in series and having normally open control switch means responsive to a hydraulic fluid condition in the hydraulic circuit and closeable thereby for energizing the pump solenoid.

2,986,897. ICE VENDING MACHINES. John R. Howard, Box 74, Dayton, Ore.



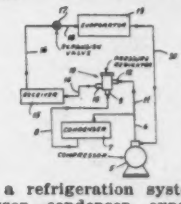
1. An ice vending machine comprising a housing, an automatic ice cube freezing and dispensing machine supported in said housing, an insulated hopper supported in said housing below said ice cube freezing and dispensing machine in position to receive ice cubes dispensed therefrom, a horizontally slidable gate underlying said hopper, a delivery chute positioned below said hopper for receiving ice cubes from said hopper with said horizontally slidable gate in open position. . . .

2,986,898. REFRIGERATION SYSTEM WITH REFRIGERANT OPERATED PUMP. Charles P. Wood, Jr., Cincinnati, Ohio, assignor to The Vilter Mfg. Co., Milwaukee, Wis.



5. A refrigerating system comprising, a compressor having a suction line for returning evaporated refrigerant to the compressor and a high pressure gaseous refrigerant line connected with a condenser, a receiver connected with said condenser, an accumulator interposed in the suction line for collecting liquid refrigerant passing through said suction line to prevent delivery thereof to the compressor, a reciprocating free piston pump for pumping liquid refrigerant from said accumulator to said receiver under pressude. . . .

2,986,899. SYSTEM FOR MAINTAINING PRESSURE IN REFRIGERATION SYSTEMS. John A. Schenk, St. Louis, and Ralph B. Tliney, Clayton, Mo., assignors to Alco Valve Co., St. Louis, Mo.



1. In a refrigeration system of the compressor - condenser - expansion device-evaporator circuit type; a condenser having an inlet pipe and an outlet pipe; a bypass conduit connecting the inlet and the outlet pipes; an expansion device connected to the outlet pipe; and a valve in both the bypass conduit and one of said pipes, movable in opposite directions to obstruct the conduit and open the pipe, and vice versa, and pressure-responsive means responsive to a pressure upstream of the expansion device to urge the valve to throttle the bypass in response to rise of such pressure. . . .

(To Be Continued)

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Load Calculation--

(Continued from Page 1, Col. 4)

NWAHACA, Fred Reed of ARI, and John Woodworth of IBR. Working with them were two engineers responsible for industry research at the University of Illinois, Edward Brown of the NWAHACA research program, and Warren Harris of the IBR projects. They analyzed data and results obtained from the research residences at the U. of I. used in these projects. From this committee work the "unified" calculation procedure was developed.

Simplification, Accuracy Are Keynotes

Simplication and accuracy are the dominant keynotes of the new procedure, states the NWAHACA releases on its new Manual J. It cites a reference to Table 2, in which all types of walls and partitions appear in the same column, accompanied by a factor breakdown showing different types of materials of varying thicknesses. A "family-type" grouping of materials opposite the heat transfer multiplier (U values multiplied by the design temperature difference) greatly simplifies using the book, it is stated.

"Basically, in preparing this material, it meant sifting out the multiplicity of thermal differences between dry walls and the lath-and-plaster type," said Gilkey, the association's technical director, adding that "in many cases the differences are slight—from a standpoint of actual heat losses and heat gains—making consolidation of this material both practical and profitable.

Gilkey also explains that space and time-savings are not the only benefits resulting from the new presentation method, but reducing decision-making—always an important consideration—is another plus.

"This is an absolute benefit to the user of the new method," he says, "because construction details are now described in general, recognizable terms, instead of laborious detail, which can be time-consuming and confusing."

Numerous Time-Saving Features In Procedure

There are numerous time-saving features in the new procedure presented in Manual J. Under the old method, approximately 4,400 factors were needed to cover the basic information on heat losses alone in Manual 3, plus a similar number to cover heat gains in Manual 11. With the new procedure, only about 1,000 factors are required to do the same job thoroughly for both heat gains and heat losses.

In addition to this, the NWAHACA technical authority explains, "under the old method it was also necessary for the manual-user to multiply the design temperature difference to get the correct multiplier. Now this is no longer necessary, for in Table 2 factors are given for the various design differences, and in Table 10 factors are given for various design temperatures for each daily range."

Broadened information on the glass heat transfer table as well as other new information, some of which was heretofore available only to engineers, is now presented to the dealer-contractor in easy-to-use form.

New Manual J Format

The format of the new Manual J, it is stated, meets the need for a streamlined and efficient method for load calculating by being separated into three principal divisions.

Explanations of the new procedure are set forth in the opening portion of the book and are highlighted by graphic illustrations. All of the ordinary or normal conditions necessitating heat gain and heat loss calculations under the new method are set forth in this 24-page section.

Tables and maps, which form the "working" section of the manual, take up the middle portion, and the third section is restricted to factors governing unusual construction features, implemented by structural illustrations.

Kaiser To Make Refrigerants--

(Continued from Page 1, Col. 3)

and fluorocarbon products which will be available for sale from the new plant," the announcement said.

Answering questions asked by the NEWS, a company spokesman said that Kaiser plans to market conventional refrigerants such as R-12 and R-22, and that it will aim for both the industrial and the replacement markets.

Great Potential Cited

"The fluorine chemicals represent one of the greatest areas of potential growth in the world's rapidly expanding chemical industry," Rhoades said in announcing the move.

"In view of our established program of producing an increasing percentage of our own raw materials, and our own substantial annual requirements for hydrogen fluoride for the production of aluminum fluoride used in the aluminum reduction process, this expansion is a logical development for us.

"It will provide modern, efficient facilities from which we can supply our own requirements and at the same time will permit us to offer large tonnages to the industrial chemical market."

Uses Listed

Hydrogen fluoride is being used increasingly in the production or processing of petroleum, stainless steel, glass, fluorocarbons, aluminum fluoride, cryolite, uranium, certain inorganic salts, and special metals, the announcement said, adding: "The aluminum and fluorocarbon industries together account for about 70% of total hydrogen fluoride usage.

"Fluorocarbons are used as refrigerants in air conditioners, refrigerators, and freezers; as propellants for aerosols; in plastics, and for a variety of miscellaneous uses."

The Kaiser Aluminum Gramercy Works is located on a 3200-acre tract on the Mississippi River about halfway between New Orleans and Baton Rouge. Production of caustic soda and chlorine was begun there early in 1958. Alumina was first produced at Gramercy in the Spring of 1959.

Jack A. Hinman Joins Fischbach & Moore

LOS ANGELES — Jack A. Hinman has joined Fischbach & Moore, Inc., as West Coast sales representative for "Conditionaire," the firm's new electronic temperature control system.

He was formerly a field engineer for control systems at General Controls Co.

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